NSWCCD-SSES, PHILADELPHIA
FIBER OPTIC SHIPBOARD CABLE PLANT COMPONENTS
RECOMMENDED COMPONENTS PARTS LIST

13 March 1998

PURPOSE

The purpose of this letter is to provide updated information on the Navy recommended fiber optic components program. This program provides assistance to those involved in the immediate procurement or use of reliable and survivable fiber optic components that are currently available for shipboard applications and to encourage standardization leading to increased and effective logistical support. The Navy recommended fiber optic components parts list includes those components recently qualified (placed on the Qualified Products List - QPL), those presently being tested with sufficient results available to be recommended and recommended First Article components/materials. A recommendation list for commercial components is being started with this edition. Related information for recommended fiber optic components is presented for a more inclusive package.

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COMPONENT LISTING – QUICK REFERENCE GUIDE (PAGE 1 of 2)

Table 1. QPL AND FIRST ARTICLE FIBER OPTIC COMPONENTS

COMPONENT	VENDOR	PAGE NUMBER GUIDE		
		PART	NSN	DOC REF
Fiber (Rotary) Splice (QPL)	Lucent	9	37	48-49
Fiber (Rotary) Splice Tray (QPL)	Lucent	9	37	48-49
	NMP*	11	*	48-49
2 X 2 Bypass Switch (1st Article)	Litton Poly-Sci*	10	*	48
Interconnection Box (QPL)	NMP	11	37	47-49
Transmitter and Receiver (1st Article)	Laser Diode	12	Not Assigned	48
Epoxy, Heat Cured (1st Article)	Lucent	9	Not Assigned	45
	Tra-Con	13	Not Assigned	45
UV Curable Adhesive (1st Article)	Lucent	9	Not Assigned	45
Index Matching Material	Lucent	9	Not Assigned	48
	Nye Lubricants	14	Not Assigned	48
MT Connector (QPL)	Packard-Hughes	15	37-38	45-47, 49
	Litton VEAM**	17	37-38	45-47, 49
Multiple Termini (QPL)	Packard-Hughes	16	38	48-49
ST Connector (QPL)	FSI	18	38	47, 49
	Lucent	19	38	47, 49
ST-to-ST Adapter (QPL)	Lucent	19	38	47, 49
Thermoplastic Cable (QPL)	Brand-Rex	20	38	47, 49
	Chromatic	21	38	47, 49
	Lucent	22	38	47, 49
Thermoset Cable (QPL)	Brand-Rex	20	38	47, 49
	Chromatic	21	38	47, 49

***** Not qualified to date.
** Litton VEAM manufactures the MT connector backshell only.

COMPONENT LISTING – QUICK REFERENCE GUIDE (PAGE 2 of 2)

Table 2. EQUIPMENT AND KITS FOR FIBER OPTIC COMPONENTS

COMPONENT	VENDOR	PAGE NUMBER GUIDE	
		PART	NSN
Measurement Quality Jumpers	KitCo	23	39
	Packard-Hughes	24	39
Fiber (Rotary) Splice Termination Kit	KitCo	25	39
ST Connector Termination Kit	KitCo	25	39
MT Connector Termination Kit	KitCo	25	39
Termination Kit Consumables, ST	KitCo	30	39
	Lucent	30	39
Polishing Puck, SC and ST	KitCo	30	Not Assigned
Hand (crimp) Tool w/die, SC	AMP	30	Not Assigned

Table 3. COMERCIAL FIBER OPTIC COMPONENTS

COMPONENT	VENDOR	PAGE NUMBER GUIDE	
		PART	NSN
ST Connector, MM (ruggedized)	FSI	29	Not Assigned
	Johanson	29	Not Assigned
	Lucent	29	39
ST-to-ST Adapter, MM	Johanson	29	Not Assigned
	Lucent	29	Not Assigned
SC Connector, MM	AMP	30	Not Assigned
Epoxy, Anaerobic	Lucent	30	Not Assigned

Other important pages:

- PARTS LIST DISTRIBUTION FORM: Page 7.
- ONE STOP SHOPPING DISTRIBUTOR LIST: Pages 26 and 27.
- CRITERIA FOR SHIPBOARD USEAGE OF MILITARY FIBER OPTIC COMPONENTS: Pages 32 to 36.
- COMPONENT DEFICIENCY POLICY/FORM: Pages 40 and 41.
- NAVY DOCUMENT REQUEST FORM: See pages 50 and 51.
- FIBER OPTIC CONTRACT VEHICLES: See pages 52 to 59.

DOC: PARTINDX.DOC

DEPARTMENT OF THE NAVY

NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION

IN REPLY REFER TO
9504
Ser 9542/28

1 APR 1998

From: Commander, Carderock Division, Naval Surface Warfare Center,
Ship Systems Engineering Station, Philadelphia, PA 19112-5083
To: Commander, Space and Warfare Systems Command (SPAWAR PD 15Q)

Subj: **NAVY RECOMMENDED FIBER OPTIC COMPONENTS PARTS LIST**

Encl: (1) Navy Recommended Fiber Optic Components Parts List Distribution Form
(2) Recommended Components Parts List, QPL and First Article Components
(3) Recommended Components Parts List, MIL-SPEC Versus Commercial Components With Appropriate Uses
(4) National Stock Numbers (NSN's) For Recommended Fiber Optic Components
(5) Component Deficiency Policy
(6) Fiber Optic Cable Plant ILS Documentation, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's and NAVSEA Drawings
(7) Fiber Optic Contract Vehicles

1. The purpose of this letter is to provide updated information on the Navy recommended fiber optic components program. This program provides assistance to those involved in the immediate procurement or use of reliable and survivable fiber optic components that are currently available for shipboard applications and to encourage standardization leading to increased and effective logistical support. The Navy recommended fiber optic components parts list includes those components recently qualified (placed on the Qualified Products List - QPL), those presently being tested with sufficient results available to be recommended and recommended First Article components/materials. A recommendation list for commercial components is being started with this edition. Related information for recommended fiber optic components is presented for a more inclusive package.

2. Enclosure (1) is a form to request a copy of the recommended parts list for fiber optic components. This parts list is updated twice a year. An updated letter or an update sheet is sent to those on the distribution list. The database for this distribution is extensive. Limit this distribution to one copy per activity or office, where feasible. Also, please use this form for removal from distribution or if only a copy of the current letter is desired. This edition of the parts list letter will soon be available on the World Wide Web for reference by others in your office and found at the following web site: www.chips.navy.mil/it. The new editions will appear in one PDF file to provide a more user friendly reference.

Subj: **NAVY RECOMMENDED FIBER OPTIC COMPONENTS PARTS LIST**

3. Enclosure (2) is the parts list for Navy recommended fiber optic MIL-SPEC components. As stated above, this list has components qualified to date, components being QPL tested with sufficient results to be recommended and recommended first article components/materials. Entries will be updated as new components and new manufacturers for existing components are qualified in future editions to this enclosure.

a. Components listed in enclosure (2) are supported by Navy standardization and logistics plans and do not require additional logistics document development. As components qualify through the Qualified Products List (QPL) process, effort will be made by the Naval Sea Systems Command (NAVSEA) Fiber Optic Logistics Manager to place these components in the Navy inventory.

b. Fiber optic transmitters and receivers are available as first article components. Epoxy, UV adhesive and index matching materials are available as recommended first article materials.

c. Preferred vendors of each component who have qualified or are in the process of qualifying their fiber optic cable plant components in NAVSEA 03J21's QPL program are provided for each component.

4. Enclosure (3) is the parts list for Navy recommended fiber optic commercial components. For each component, both the military qualified and commercial versions are listed with the appropriate use of each. The usage is classified according to tactical and non-tactical applications. The general criteria for shipboard component usage is included also to address components not yet a part of this enclosure.

5. Enclosure (4) is a listing of the National Stock Numbers (NSN's) that have been assigned to Navy recommended fiber optic components. This enclosure consists of two tables, one for QPL component NSN's and the other for commercial, non QPL, components and supplies. NSN's for other components are in the process of being assigned.

6. Enclosure (5) is a component deficiency policy being implemented by direction of the Naval Sea Systems Command Fiber Optic Program Office (NAVSEA 03J21) and the Navy Information Technology Umbrella Program (SPAWAR PD 15Q). This policy is being implemented to minimize the Fleet impact for receipt of deficient components/material. End users must be responsive and provide notification of deficient components/material in an expeditious manner for this policy to be effective. Notification to the user community of a deficient component/material will be done through E-mail. Users must complete and forward the form at the end of the enclosure to be included in future notifications.

Subj: **NAVY RECOMMENDED FIBER OPTIC COMPONENTS PARTS LIST**

7. Enclosure (6) is a listing of fiber optic military specifications, military standards, military handbooks, QPL's, NAVSEA drawings and Integrated Logistics Support (ILS) documents that are for use with fiber optic cable plants. If components under consideration are not listed in enclosure (6), recommend that you consult with NAVSEA 03J21 prior to procurement. NAVSEA Fiber Optic Logistics Manager advises that the documentation listed in this enclosure are available upon request from NAVSEA 03J21. A document request form is included at the end of the enclosure for your convenience. There is a three document limit per requester.

8. Enclosure (7) is a listing of military contracts for fiber optic components and networks. Tables are provided in this enclosure with price comparison information for MIL-SPEC cable and ST connectors listed on the PC LAN+ and ViViD contracts. Supplemental information is provided for the new ViViD contract.

9. Logistic matters, including documentation support requests, should be addressed to Commander (SEA 03J21), Naval Sea Systems Command, 2531 Jefferson Davis Highway, Arlington VA 22242-5160. NAVSEA 03J21 Fiber Optic Logistics Manager point of contact is Dr. Charles Courchaine. He can be reached at (703) 602-7241 Ext 218, FAX (703) 602-7421. Technical correspondence and enclosure (1) form submittal should be addressed to the Carderock Division, Naval Surface Warfare Center (NSWCCD-SSES), Code 9542 (Attn: E. Bluebond), Philadelphia, PA 19112-5083. NSWCCD-SSES technical point of contact is E. Bluebond. He can be reached at (215) 897-8510, FAX (215) 897-8509.

J.P. COPPOLA
By Direction

Copy to:
NAVSEA 03J21 (H. Lewis)
NAVSEA 03J21 (C. Courchaine)
NSWCDD B35 (G. Brown)
DSCC-VQP (R. Wallace,)
DSCC-VQP (A. Eschmeyer)
NSWCCD-SSES 954,9542

NAVAL SEA SYSTEMS COMMAND
FIBER OPTIC PROGRAM OFFICE
NAVY RECOMMENDED FIBER OPTIC COMPONENTS
PARTS LIST DISTRIBUTION FORM

Activity/Company: _____

Code/Mail Stop: _____(Building:_____Room:_____)

First Name: _____ Last Name:_____

Street Address: _____

City: _____ State:_____ Zip Code +4:_____--_____

Telephone Number: _____ FAX:_____

E-mail Address: _____

Please FAX completed form to NSWCCD-SSES point of contact:
Eric Bluebond at FAX: (215) 897-8509.

_____ Please add my activity/office to distribution list for current copy and future updates.

_____ Please forward the current copy only.

_____ Please make the above changes to the distribution list information.

_____ Please add my activity/office to the distribution for future updates.

Note: Please limit this distribution request to one copy per activity/office, where feasible.
Thanks!

DOC: DISTFORM.FRM

Enclosure (1)

QPL AND FIRST ARTICLE COMPONENTS

Rev C: 13 March 1998

This enclosure is the parts list for Navy recommended fiber optic MIL-SPEC components. This parts list includes components qualified (meeting QPL tests) to date, components presently being QPL tested with sufficient results available to be recommended, and recommended first article components/materials. Entries will be updated in future revisions to this enclosure after the components are qualified. Components are listed in MIL-SPEC numerical order.

VENDOR WITH COMPONENTS LISTING FOR EACH SHEET

Vendor 1/ 2/	**Component & MIL-SPEC/ NAVSEA Drawing**	**Component & MIL-SPEC/ NAVSEA Drawing**	**Component & MIL-SPEC/ NAVSEA Drawing**
Lucent Technologies	Rotary Splice MIL-S-24623	UV Adhesive MIL-A-24793	Index Matching Gel MIL-M-24794
Litton-Poly-Scientific	2X2 Bypass Switch MIL-S-24725		
NMP Corp.	Rotary Splice Tray MIL-S-24623	IC Box MIL-S-24728	
Laser Diode, Inc.	Transmitter MIL-M-24791	Receiver MIL-M-24791	
Tra-Con, Inc.	Epoxy MIL-A-24792		
Nye Lubricants, Inc.	Index Matching Gel MIL-M-24794		
Packard-Hughes	MT Connector & Dust Cover MIL-C-28876	Multiple Termini MIL-T-29504	
Litton VEAM	MT Connector (Backshell) MIL-C-28876		
FSI	ST Connector MIL-C-83522		
Lucent Technologies	ST Connector MIL-C-83522	Epoxy MIL-A-24792	
Brand-Rex Company	Cable-Thermoplastic MIL-C-85045	Cable-Thermoset MIL-C-85045	
Chromatic Technologies	Cable-Thermoplastic MIL-C-85045	Cable-Thermoset MIL-C-85045	
Lucent Technologies	Cable-Thermoplastic MIL-C-85045		
KitCo	Measurement Quality Jumpers 6877804		
Packard-Hughes	Measurement Quality Jumpers 6877804		
KitCo	ST Connector Termination Kit 6872811	Fiber (Rotary) Splice Termination Kit 6872812	MT Connector Termination Kit 6872813
Various	**ONE STOP SHOPPING**		

1/ Table lists the order in which the sheets are found in this enclosure.
2/ Some sheets list more than one component/material when provided by the same vendor.

DOC: PARTLIST.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 27 October 1997

ITEM: Splice, UV Adhesive & Index Matching Material
MIL-SPEC: MIL-S-24623, MIL-A-24793, MIL-M-24794
VENDOR: Lucent Technologies, Inc. (formerly AT&T Network Systems)
VENDOR GOV'T SALES POC: Robert Huckeba (770) 798-3605, FAX: (770) 798-2001
Vendor Address: Lucent Technologies, Inc.
Room B170
2000 Northeast Expressway
Norcross, GA 30071

DESCRIPTION	MIL-SPEC P/N	VENDOR P/N
Qualified QPL Components:		
Rotary splice (1 pack, 12 letter code "M" splices with 12 "B" clips) 1/	M24623/04-01	107-238-008
Rotary splice (1 pack, 12 letter code "M" splices, no "B" clips) 1/	M24623/04-04	107-248-510
"B" clips only (1 pack, 60 "B" clips)	M24623/04-05	105-205-686
Rotary splice tray (1 pack, 10 splice trays) 2/	M24623/04-02	105-356-570
First Article Approved Material:		
Adhesive, UV Curable, One Part, Fiber Optic 3/	M24793-1	105 205 660
Index Matching Material, Fiber Optic, one part 4/	M24794-1	107 428 948

1/ "B" clip = triangular alignment sleeve with no offset
2/ Non Shock Hardened Splice Tray.
3/ 1 pack = quantity of 1 syringe with 4 gm of adhesives and two needles.
Expiration date upon ship date: 6 months minimum.
4/ 1 pack = quantity of 5 packages at 0.5 gm per package. No shelf life; expiration date is specified since material contains no active ingredient to cause deterioration. Material can last for many years if stored properly.

DOC: LCNTSPL.DOC

QPL AND FIRST ARTICLE COMPONENTS

ITEM: Switch
MIL-SPEC: MIL-S-24725
VENDOR: Litton Poly-Scientific
VENDOR GOV'T SALES POC: Mike Wright (540) 953-4751 X344, FAX: (540) 953-1841
Vendor Address: Litton Poly-Scientific
1213 North Main Street
Blacksburg, VA 24060

DESCRIPTION **Following Components Are Not Qualified To Date:**	MIL-SPEC P/N	VENDOR P/N
Switch, hard mounted, electrical, nonlatching, MM cable, 2x2 bypass, optical pigtails entering on opposing sides.	M24725/1-01T	FO4663R-B300-100C-N
Switch, hard mounted, electrical, nonlatching, MM cable, 2 x 2 bypass, optical pigtails entering on one side.	M24725/1-01S	NA*
Switch, non-hard mounted, electrical, nonlatching, MM cable, 2 x 2 bypass, optical pigtails entering on opposing sides.	M24725/2-01T	FO4663R-B300-100C-N
Switch, non-hard mounted, electrical, nonlatching, MM cable, 2 x 2 bypass, optical pigtails entering on one side.	M24725/2-01S	NA*

* Not applicable to Litton Poly-Scientific

DOC: LTNSWTCH.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 27 October 1997

ITEM: Interconnection Box, Splice Tray
MIL-SPEC: MIL-I-24728, MIL-S-24623
VENDOR: NMP Corp.
VENDOR GOV'T SALES POC: Les Lapidus (918) 252-0481, FAX: (918) 252-0486
Vendor Address: NMP Corp.
P.O. Box 35493
Tulsa, OK 74153-0493

DESCRIPTION	MIL-SPEC P/N	VENDOR P/N
Qualified QPL Components:		
Box, sized for one 48 adapter patch panel, with cable entrance	M24728/1-005	11401-101
Box, sized for one 48 adapter patch panel, without cable entrance	M24728/1-006	11401-104
Box, sized for two 48 adapter patch panels, with cable entrance	M24728/2-005	10913-101
Box, sized for two 48 adapter patch panels, without cable entrance	M24728/2-006	10913-104
Box, sized for three 48 adapter patch panels, with cable entrances	M24728/3-001	11112-101
Box, sized for three 48 adapter patch panels, without cable entrances	M24728/3-004	11112-104
Box, sized for one 8 adapter patch panel, without cable entrance	M24728/4-001	11166-101
Box, sized for one 16 adapter patch panel, without cable entrance	M24728/5-001	11164-101
48 adapter patch panel (for ST connectors)	M24728/6-001	11254-101
8 adapter patch panel (for ST connectors)	M24728/4-002 (comes /w box)	11406-101
16 adapter patch panel (for ST connectors)	M24728/5-002 (comes w/ box)	11407-101
Splice tray holder	M24728/7-001	10427-101
Aluminum mounting plate for 48 adapter patch panel / splice tray holder	comes with box	11210-101
Wedge pack for cable entrance configuration	comes with box	11228-1
Following Component Is Not Qualified To Date:		
Rotary splice tray (1 pack, 10 splice trays), Shock hardened	M24623/04-03	11502-101

DOC: NMPBOX.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 27 October 1997

ITEM: Transmitter and Receiver
MIL-SPEC: MIL-M-24791
VENDOR: Laser Diode, Inc.
VENDOR GOV'T. SALES POC: Ken Miller (908) 549-9001, FAX (908) 906-1559
Vendor Address: Laser Diode, Inc.
4 Olden Avenue
Edison, NJ 08820

DESCRIPTION **First Article Approved Components:**	MIL-SPEC P/N	VENDOR P/N
Transmitter, 1300 nm, LED, 16 pin DIP, MM pigtail, 125 Megabits, high power	M24791/1-HP	TS 2143C
Receiver, long wavelength digital, 16 pin DIP, MM pigtail, 125 Megabits, high sensitivity	M24791/2-HS	RT 2714C
Receiver, long wavelength digital, 16 pin DIP, MM pigtail, 125 Megabits, low sensitivity	M24791/2-LS	RT 2714C

DOC: LDIXTRC.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev B: 13 March 1998

ITEM: Epoxy, Heat Cured
MIL-SPEC: MIL-A-24792
VENDOR: Tra-Con, Inc.
VENDOR GOV'T. SALES POC: Barry Siroka (800) 872-2661, FAX: (617) 391-7380
Vendor Address: Tra-Con, Inc.
Resin Systems Division
55 North Street
Medford, MA 02155

DESCRIPTION **First Article Approved Material:**	MIL-SPEC P/N	VENDOR P/N
Epoxy, Two Part, Fiber Optic, Room/Heat Cured, quantity: 1 packet, 2 gm bipax *	M24792-A	BA-F112
Epoxy, Two Part, Fiber Optic, Room/Heat Cured, quantity: 1 packet, 7 gm bipax *	M24792-A	BB- F112
Epoxy, Two Part, Fiber Optic, Room/Heat Cured, quantity: 1 packet, 28 gm bipax *	M24792-A	BC- F112
Epoxy, Two Part, Fiber Optic, Room/Heat Cured, quantity: six -1 gm packets (minipaxs) on a strip *	M24792-A	BY- F112

* Each bipax contains a pre-measured quantity of resin and hardener separated by a divider. F112 has a 1 year shelf life from date of shipment.

DOC: TCNEPOXY.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

ITEM: Index Matching Material

MIL-SPEC: MIL-M-24794
VENDOR: Nye Lubricants, Inc.
VENDOR GOV'T SALES POC: Paul Bessette (508) 996-6721, FAX: (508) 997-5285
Vendor Address: Nye Lubricants, Inc.
12 Howland Rd.
Fairhaven, MA 02719

ALTERNATE SOURCE: Jay Weikel (704) 587-9447, FAX: (704) 587-9566
Source Address: Nye Lubricants, Inc. - Southeast Engineering Office
10660 York Road, Suite 9
Charlotte, NC 28273

DESCRIPTION **First Article Approved Material:**	MIL-SPEC P/N	VENDOR P/N
Index Matching Material, Fiber Optic, one part, 1 cc syringe*	M24794-1	OC-432/1 cc syringe
Index Matching Material, Fiber Optic, one part, 10 cc syringe*	M24794-1	OC-432/10 cc syringe
Index Matching Material, Fiber Optic, one part, 2 ounce glass jar*	M24794-1	OC-432/2 ounce glass jar
Index Matching Material, Fiber Optic, one part, 6 ounce Semco cartridge*	M24794-1	OC-432/6 Semco cartridges

* Two-year shelf life specified from date of shipment. Shelf life is indefinite if stored properly. There is no active ingredient in the index matching material to cause deterioration. Material can be returned to Nye Lubricants, Inc. to be re-qualified if shelf life is exceeded.

DOC: NYEINDEX.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 25 March 1998

ITEM: Multiple Removable Termini Connector: Connector

MIL-SPEC: MIL-C-28876
VENDOR: Packard-Hughes Interconnect (formerly Hughes Interconnect Systems Division)
VENDOR GOV'T SALES POC: Alan Whitebrook (714) 660-5778/Robert Torres (714) 660-5829,
FAX: (714) 660-6981
Vendor Address: Packard-Hughes Interconnect
17150 Von Karman Avenue
Irvine, CA 92713-9685

DESCRIPTION **Qualified QPL Components:**	MIL-SPEC P/N	VENDOR P/N
Connector, four termini, receptacle, wall mount, with insert retention nut	M28876/1-B1S1	M28876/1-B1S1
Connector, eight termini, receptacle, wall mount, with insert retention nut	M28876/1-C1S1	M28876/1-C1S1
Connector, four termini, plug, no strain relief, with insert retention nut	M28876/6-B1P1	M28876/6-B1P1
Connector, eight termini, plug, no strain relief, with insert retention nut	M28876/6-C1P1	M28876/6-C1P1
Connector, four termini, plug, no strain relief, no insert retention nut	M28876/6-B1P1N	M28876/6-B1P1N
Connector, eight termini, plug, no strain relief, no insert retention nut	M28876/6-C1P1N	M28876/6-C1P1N
Connector, four termini, plug, straight backshell with strain relief for four fiber cable	M28876/7-B12P1	M28876/7-B12P1
Connector, eight termini, plug, straight backshell with strain relief for eight fiber cable	M28876/7-C11P1	M28876/7-C11P1
Connector, four termini, plug, 45^{o} backshell with strain relief for four fiber cable	M28876/8-B12P1	M28876/8-B12P1
Connector, eight termini, plug, 45^{o} backshell with strain relief for eight fiber cable	M28876/8-C11P1	M28876/8-C11P1
Connector, four termini, plug, 90^{o} backshell with strain relief for four fiber cable	M28876/9-B12P1	M28876/9-B12P1
Connector, eight termini, plug, 90^{o} backshell with strain relief for eight fiber cable	M28876/9-C11P1	M28876/9-C11P1
Connector, four termini, receptacle, jamnut mount, with insert retention nut	M28876/11-B1S1	M28876/11-B1S1
Connector, eight termini, receptacle, jamnut mount, with insert retention nut	M28876/11-C1S1	M28876/11-C1S1

DOC: PAKHUCON.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 25 March 1998

ITEM: Multiple Termini, Connector, Removable (for MIL-C-28876 Connectors)
MIL-SPEC: MIL-T-29504
VENDOR: Packard-Hughes Interconnect (formerly Hughes Interconnect Systems Division)
VENDOR GOV'T SALES POC: Alan Whitebrook (714) 660-5778/Robert Torres (714) 660-5829,
FAX: (714) 660-6981
Vendor Address: Packard-Hughes Interconnect
17150 Von Karman Avenue
Irvine, CA 92713-9685

DESCRIPTION **Qualified QPL Components:**	MIL-SPEC P/N	VENDOR P/N
Termini, pin, long length, ceramic guide bushing, MM, w/ crimp sleeve, for MIL-C-28876 connectors	M29504/14-4131C	M29504/14-4131C
Termini, socket, long length, ceramic guide bushing, MM, w/ crimp sleeve, for MIL-C-28876 connectors	M29504/15-4171C	M29504/15-4171C
Termini, dummy, for MIL-C-28876 connectors	M29504/3-4038	M29504/3-4038

DOC: PHTERMNI.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

ITEM: Backshells for Multiple Removable Termini Connector (MIL-C-28876)
MIL-SPEC: MIL-C-28876
VENDOR: Litton VEAM
VENDOR GOV'T SALES POC: Doug Lombardi (203) 274-9681 X239, FAX: (203) 274-4963
Vendor Address: Litton VEAM
100 New Wood Road
Watertown, CT 06795-3339

DESCRIPTION **Qualified QPL Components:**	MIL-SPEC P/N	VENDOR P/N
Backshell, straight, regular length, with strain relief for MIL-C-28876/1, /6 and /11 four termini connectors for four fiber cable	M28876/27-B2	A98179-13-00-MS3-T59
Backshell, straight, long length, with strain relief for MIL-C-28876/1, /6 and /11 eight termini connectors for eight fiber cable (O.D. range: 0.424 to 0.465 in.)	M28876/27-C3L	A98179L-15-00-04US-T59
Backshell, 45^{o}, regular length, with strain relief for MIL-C-28876/1, /6 and /11 four termini connectors for four fiber cable	M28876/28-B2	A98179-13-45-MS3-T59
Backshell, 45^{o}, long length, with strain relief for MIL-C-28876/1, /6 and /11 eight termini connectors for eight fiber cable (O.D. range: 0.424 to 0.465 in.)	M28876/28-C3L	A98179L-15-45-04US-T59
Backshell, 90^{o}, regular length, with strain relief for MIL-C-28876/1, /6 and /11 four termini connectors for four fiber cable	M28876/29-B2	A98179-13-90-MS3-T59
Backshell, 90^{o}, long length, with strain relief for MIL-C-28876/1, /6 and /11 eight termini connectors for eight fiber cable (O.D. range: 0.424 to 0.465 in.)	M28876/29-C3L	A98179L-15-90-04US-T59

DOC: LVBSHELL.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

Item: ST Connectors

MIL-SPEC: MIL-C-83522
VENDOR: Fiber Systems International, Inc. (FSI)
VENDOR GOV'T. SALES POC: Thomas Hazelton (214) 690-6005, FAX: (214) 690-8181
Vendor Address: Fiber Systems International, Inc.
610 Presidential Drive, Suite 10
Richardson, Texas 75081

DESCRIPTION **Qualified QPL Components:**	MIL-SPEC P/N	VENDOR P/N
ST connector, nonlocking boot, 125 micron, MM *	M83522/16-CNX	MSTC1000

* Next revision to MIL-C-83522/16 will change this MIL-SPEC part number to MS83522/16-DNX. Per NSWCCD-SSES ltr 9504 Ser 9542/08 of 30 May 97, configuration designation “D” is the one to be used to specify the MIL-C-83522/16 ST non-locking connector.

DOC: FSISTCON.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

Item: ST Connectors & Epoxy
MIL-SPEC: MIL-C-83522, MIL-A-24792
VENDOR: Lucent Technologies, Inc. (formerly AT&T Network Systems)
VENDOR GOV'T. SALES POC: Doug Buffington (770) 798-2930, FAX: (770) 798-2001
Vendor Address: Lucent Technologies, Inc.
Room B170
2000 Northeast Expressway
Norcross, GA 30071

DESCRIPTION	MIL-SPEC P/N	VENDOR P/N
Qualified QPL Components:		
Cover, protective, with lanyard, ST connector	M83522/16-ENX	107 397 861
ST to ST adapter, 125 micron, MM	M83522/17-NX	107 262 198
ST connector, nonlocking boot, 125 micron, MM 1/	M83522/16-CNX	107 629 602
ST connector, nonlocking boot, 125 micron, SM/MM 1/ 2/	M83522/16-CNY	107 259 673
ST to ST adapter, 125 micron, SM/MM	M83522/17-NY	107 779 746
First Article Approved Material:		
Epoxy, Two Part, Fiber Optic, Room/Heat Cured, 15 bipacks 3/	M24792-A	105 489 355
Special Application Components:		
ST connector, QPL, locking boot, 125 micron, MM	M83522/16-ANX	107 259 665
Special Application Material:		
Epoxy, Anaerobic, Fiber Optic 4/ 5/	None	Adhesive: 106 730 856 Primer: 106 730 849

1/ Next revision to MIL-C-83522/16 will change this MIL-SPEC part number to MS83522/16-DNX and MS83522/16-DNY. Per NSWCCD-SSES ltr 9504 Ser 9542/08 of 30 May 97, configuration designation "D" is the one to be used to specify the MIL-C-83522/16 ST non-locking connector.
2/ System mechanical shock optical discontinuity requirement: None for single mode applications.
3/ Each bipack contains a pre-measured quantity of resin and hardener separated by a divider. There is 8 gm of resin and hardener per bipack. Expiration date upon ship date: 6 months minimum.
4/ Note: **Anaerobic epoxy is authorized only for administrative applications and is not authorized for use in tactical or mission critical applications.**
5/ Adhesive: Quantity of one 10 ml bottle. Primer: Quantity of one 1 oz bottle. Expiration date upon ship date, both adhesive and primer: 6 months minimum.
6/ Product and price not available to date.

DOC: LCNSTCON.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

ITEM: Cable
MIL-SPEC: MIL-C-85045
VENDOR: BICC Brand-Rex Company
VENDOR GOV'T SALES POC: Dennis Chalk (860) 456-8000, FAX: (860) 456-7004
Vendor Address: BICC Brand-Rex Company
1600 West Main Street
Willimantic, CT 06226-1128

DESCRIPTION	MIL-SPEC P/N	VENDOR P/N
Qualified QPL Components		
One fiber, OFCC, MM, 500 MHz BW	M85045/16-01	OC-1468
Four fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/15-01N	OC-1369
Four fiber, Thermoset (Cross Linked), MM, 500 MHz BW, Low pressure	M85045/18-01N	OC-1417
Eight fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/13-01N	OC-1423
Eight fiber, Thermoset (Cross Linked), MM, 500 MHz BW, Low pressure	M85045/17-01N	OC-1434
Following Components Are Not Qualified To Date:		
24 fiber, Thermoset (Cross Linked), MM	M85045/20-01L	OC-1569
33 fiber, Thermoset (Cross Linked), MM	M85045/20-01F	OC-1570
36 fiber, Thermoset (Cross Linked), MM	M85045/20-01M	OC-1540

DOC: BRXCABLE.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev B: 13 March 1998

ITEM: Cable
MIL-SPEC: MIL-C-85045
VENDOR: Chromatic Technologies, Inc.
VENDOR GOV'T SALES POC: Giovanni Tomasi (508) 541-2226, FAX: (508) 541-8122
Vendor Address: Chromatic Technologies, Inc.
9 Forge Park
Franklin, MA 02038

DESCRIPTION **Qualified QPL Components**	MIL-SPEC P/N	VENDOR P/N
Four fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/15-01N	S458T-04-62G
Four fiber, Thermoplastic, MM, 500 MHz BW, High pressure	M85045/15-01P	S458T-04-62G
Four fiber, Thermoset (Cross Linked), MM, 500 MHz BW, Low pressure	M85045/18-01N	S454T-04-62G
Four fiber, Thermoset (Cross Linked), MM, 500 MHz BW, High pressure	M85045/18-01P	S454T-04-62G
Eight fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/13-01N	S458T-08-62G
Eight fiber, Thermoplastic, MM, 500 MHz BW, High pressure	M85045/13-01P	S458T-08-62G
Eight fiber, Thermoset (Cross Linked), MM, 500 MHz BW, Low pressure	M85045/17-01N	S454T-08-62G
Eight fiber, Thermoset (Cross Linked), MM, 500 MHz BW, High pressure	M85045/17-01P	S454T-08-62G

DOC: CHRCABLE.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 28 October 1997

ITEM: Cable
MIL-SPEC: MIL-C-85045
VENDOR: Lucent Technologies, Inc. (formerly AT&T Network Systems)
VENDOR GOV'T SALES POC: Terry Coffman (770) 798-2072, FAX: (770) 798-2001
Vendor Address: Lucent Technologies, Inc.
Room B170
2000 Northeast Expressway
Norcross, GA 30071

Note: Cable can be purchased through distributors only.

DESCRIPTION **Qualified QPL Components**	MIL-SPEC P/N	VENDOR P/N
One fiber, OFCC, MM, 500 MHz BW	M85045/16-01	105 542 229
One fiber, OFCC, SM	M85045/16-02	105 773 709
Four fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/15-01N	105 570 162
Four fiber, Thermoplastic, SM, Low pressure	M85045/15-02N	105 572 804
Four fiber, Thermoplastic, MM, 500 MHz BW, High pressure	M85045/15-01P	105 570 162
Four fiber, Thermoplastic, SM, High pressure	M85045/15-02P	105 572 804
Eight fiber, Thermoplastic, MM, 500 MHz BW, Low pressure	M85045/13-01N	106 446 537
Eight fiber, Thermoplastic, SM, Low pressure	M85045/13-02N	106 446 552
Eight fiber, Thermoplastic, MM, 500 MHz BW, High pressure	M85045/13-01P	106 446 537
Eight fiber, Thermoplastic, SM, High pressure	M85045/13-02P	106 446 552

DOC: LCTCABLE.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 30 October 1997

ITEM: Fiber Optic Measurement Quality Jumpers
VENDOR: KitCo
VENDOR GOV'T. SALES POC: Larry Widgeon (757) 518-0504, FAX: (757) 518-0529
Vendor Address: KitCo
5269 Cleveland St.
Virginia Beach, VA 23462

Note: Components can be purchased through distributor only (Anicom, Inc.).

DESCRIPTION **Measurement Quality Jumper Sets**	MIL-SPEC P/N	VENDOR P/N
ST set: one item 6877804-01 & two item 6877804-05	None	6877804-STJS
Rotary splice set: one item 6877804-02 & two item 6877804-06	None	6877804-RMSJS
MT shell size 13 (4 channel) set: one item 6877804-03, one item 6877804-04, two item 6877804-07, two item 6877804-08	None	6877804-MTJS13
MT shell size 15 (8 channel) set: one item 6877804-03, one item 6877804-04, 2 item 6877804-09, two item 6877804-10	None	6877804-MTJS15
Replacement Measurement Quality Jumpers	**Item Number On NAVSEA DWG 6877804**	**VENDOR P/N**
Jumper, 50 meter, MM, ST-to-ST	6877804-01	6877804-01
Jumper, 50 meter, MM, ST-to-rotary splice	6877804-02	6877804-02
Jumper, 50 meter, MM, ST-to-multiple termini pin	6877804-03	6877804-03
Jumper, 50 meter, MM, ST-to-multiple termini socket	6877804-04	6877804-04
Jumper, 1 meter, MM, ST-to-ST	6877804-05	6877804-05
Jumper, 1 meter, MM, ST-to-rotary splice	6877804-06	6877804-06
Jumper, 1 meter, MM, ST-to-4 channel plug & termini pins	6877804-07	6877804-07
Jumper, 1 meter, MM, ST-to-4 channel receptacle & termini sockets	6877804-08	6877804-08
Jumper, 1 meter, MM, ST-to-8 channel plug & termini pins	6877804-09	6877804-09
Jumper, 1 meter, MM, ST-to-8 channel receptacle & termini sockets	6877804-10	6877804-10

DOC: KCJUMPER.DOC

QPL AND FIRST ARTICLE COMPONENTS

25 March 1998

ITEM: Fiber Optic Measurement Quality Jumpers
VENDOR: Packard-Hughes Interconnect (formerly Hughes Interconnect Systems Division)
VENDOR GOV'T SALES POC: Alan Whitebrook (714) 660-5778/Robert Torres (714) 660-5829,
FAX: (714) 660-6981
Vendor Address: Packard-Hughes Interconnect
17150 Von Karman Avenue
Irvine, CA 92713-9685

DESCRIPTION **Replacement Measurement Quality Jumpers**	Item Number On NAVSEA DWG 6877804	VENDOR P/N
Jumper, 50 meter, MM, ST-to-ST	6877804-01	4567773-1H
Jumper, 50 meter, MM, ST-to-rotary splice	6877804-02	4567774-1H
Jumper, 50 meter, MM, ST-to-multiple termini pin	6877804-03	4567775-1H
Jumper, 50 meter, MM, ST-to-multiple termini socket	6877804-04	4567775-2H
Jumper, 1 meter, MM, ST-to-ST	6877804-05	4567773-2H
Jumper, 1 meter, MM, ST-to-rotary splice	6877804-06	4567774-2H
Jumper, 1 meter, MM, ST-to-4 channel plug & termini pins	6877804-07	4567776H
Jumper, 1 meter, MM, ST-to-4 channel receptacle & termini sockets	6877804-08	4567777H
Jumper, 1 meter, MM, ST-to-8 channel plug & termini pins	6877804-09	4567778H
Jumper, 1 meter, MM, ST-to-8 channel receptacle & termini sockets	6877804-10	4567779H

DOC: PHJUMPER.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 30 October 1997

ITEM: Fiber Optic Connector/Splice Termination Kits
VENDOR: KitCo
VENDOR GOV'T. SALES POC: Larry Widgeon (757) 518-0504, FAX: (757) 518-0529
Vendor Address: KitCo
5269 Cleveland St.
Virginia Beach, VA 23462

Note: Components can be purchased through distributor only (Anicom, Inc.).

DESCRIPTION Connector/Splice Termination Kits	NAVSEA DWG	VENDOR P/N
ST connector temination kit	6872811	0801-8010
MT connector termination kit	6872813	0801-8000
MIL-S-24623/4 (rotary) splice termination kit	6872812	0801-8020
FDDI connector tool supplement kit *	None	0801-8040

* Must be used with ST connector termination kit.

DOC: KTCOKITS.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev A: 30 October 1997

ONE STOP SHOPPING

Component*	Anixter	Anicom
MIL-S-24623 fiber (rotary) splice	**X**	**X**
MIL-S-24623 splice tray	**X**	**X**
MIL-S-24725 switch		
MIL-I-24728 interconnection box		**X**
MIL-M-24791 transmitter		
MIL-M-24791 receiver		
MIL-A-24792 epoxy, two part	**X**	**X**
MIL-A-24792 epoxy, anaerobic	**X**	**X**
MIL-A-24793 adhesive, UV curable	**X**	**X**
MIL-M-24794 index matching material	**X**	**X**
MIL-C-28876 MT connector		**X**
MIL-C-29504 termini		**X**
MIL-C-83522 ST connector	**X**	**X**
MIL-C-85045 cable-thermoplastic	**X**	**X**
MIL-C-85045 cable-thermoset (cross linked)	**X**	
Fiber optic termination kits		
ST connector kit		**X**
MT connector kit		**X**
MIL-S-24623/4 rotary splice kit		**X**
Measurement quality jumper sets		
ST set		**X**
Rotary splice set		**X**
MT shell size 13 (4 channel) set		**X**
MT shell size 15 (8 channel) set		**X**
Replacement jumpers		**X**

* See distributor list on next sheet for addresses and points of contact.

DOC: ONE STOP.DOC

QPL AND FIRST ARTICLE COMPONENTS

Rev B: 13 March 1998

DISTRIBUTOR LIST - ONE STOP SHOPPING

VENDOR: ANICOM, INC.
VENDOR GOV'T. SALES POC: Fran Flora (757) 499-1100, FAX: (757) 456-5695
Vendor Address: Anicom, Inc.
5301 Cleveland St.
Virginia Beach, VA 23462

VENDOR: ANIXTER, INC.
VENDOR SHIPBOARD SALES POC:
East Coast: PA- North: Jeff Willemin (800) 842-0076, FAX (804) 762-9923
East Coast: South of PA: Leann Burndige (800) 842-0076, FAX (804) 762-9923
West FL - TX: Steve Boudreaux (800) 662-7700, FAX (504) 888-5042
West Coast: Mark Toups (800) 662-7700, FAX (504) 888-5042
Vendor Address: Anixter Inc.
5000 Cox Rd. Suite 130
Glen Allen, VA 23060

DOC: ONESTOP.DOC

MIL-SPEC VERSUS COMMERCIAL COMPONENTS WITH APPROPRIATE USES

Rev A: 29 October 1997

This enclosure is the parts list for Navy recommended fiber optic commercial components. For each component, the recommended MIL-SPEC and commercial variants are listed along with the appropriate use classified according to tactical and non-tactical shipboard applications. NSWCCD-SSES is in the process of evaluating commercial-off-the-shelf components for non-tactical shipboard applications. Entries will be updated in future revisions to this enclosure after testing is completed on each type of commercial component. For components not yet a part of this enclosure, NSWCCD-SSES ltr 9504 Ser 9542/09 of 30 May 97 is included to provide criteria for shipboard component usage.

This enclosure is comprised of the following documents:

1. SINGLE FERRULE CONNECTORS, ADAPTERS & THEIR APPROPRIATE USES, SUMMARY GUIDE (Rev D of 25 Sep 97).

2. EPOXY TYPES & THEIR APPROPRIATE USES, SUMMARY GUIDE (Rev A of 8 Oct 97).

3. CRITERIA FOR SHIPBOARD USAGE OF MILITARY FIBER OPTIC COMPONENTS, SECOND UPDATE (NSWCCD-SSES ltr 9504 Ser 9542/09 of 30 May 97).

DOC: ENCL3LTR

MIL-SPEC VERSUS COMMERCIAL COMPONENTS WITH APPROPRIATE USES

Rev E: 25 March 1998

SINGLE FERRULE CONNECTORS, ADAPTERS & THEIR APPROPRIATE USES, SUMMARY GUIDE

- **QPL ST Connectors & ST-to-ST Adapters (qualified to MIL-C-83522).**

Applications: All cable runs connected to fiber optic cable plant backbones, all cable drops for tactical applications.

Part Description	Manufacturer	Part Number
ST connector, QPL to MIL-C-83522/16, nonlocking boot, 125 um, Multimode	FSI	MSTC1000
	Lucent	107 629 602
ST connector, QPL to MIL-C-83522/16, nonlocking boot, 125 um, Single Mode	Lucent	107 259 673
ST-to-ST adapter, QPL to MIL-C-83522/17, Multimode	Lucent	107 262 198
ST-to-ST adapter, QPL to MIL-C-83522/17, Single Mode	Lucent	107 779 746

- **Ruggedized, Commercial ST Connectors & ST-to-ST Adapters**
(Not qualified to MIL-C-83522 although some vendors incorrectly refer to as "Military").

Applications:

Tactical: Mate with plastic adapters on commercial interface cards which includes Network Interface Cards (NIC cards) for tactical applications, mate with equipment and patch panels mounted to the interior of "shock isolated" cabinets for tactical applications.

Non-Tactical: Cable drops for non-tactical applications, mate with equipment and patch panels mounted to the interior of cabinets for non-tactical applications (includes plastic adapters on commercial interface cards which includes Network Interface Cards).

Part Description	Manufacturer	Part Number
ST connector, commercial-ruggedized, nonlocking boot, 125 um, MM	FSI	MSTC1100
	Johanson	2566-2
	Lucent	105 753 669 or 106 812 274
ST-to-ST adapter, commercial, Multimode	Johanson	2523-11
	Lucent	104 148 028

DOC: STUSESUM.DOC

MIL-SPEC VERSUS COMMERCIAL COMPONENTS WITH APPROPRIATE USES

• Standard Commercial-Off-The-Shelf (COTS) SC Connectors.

Special usage: Some commercial equipment is only supplied with an SC connection port or adapter. The SC connector is to be used only at the SC adapter interface with this commercial equipment.

Logistic Support: The SC connector is not supported logistically. The standard Navy ST connector termination kit may be used when supplemented by a manufacturer specific crimp tool. The polishing puck in the Standard Navy ST Connector Termination Kit manufactured after September 1997 will accommodate both the ST connector and the SC connector. For the Standard Navy ST Connector Termination Kit manufactured before September 1997, the newer polishing puck must be obtained for SC connector terminations.

Applications:

Tactical: Mate with plastic adapters on commercial interface cards that include Network Interface Cards (NIC cards). Mate with equipment mounted to the interior of "shock isolated" cabinets for tactical applications.

Non-Tactical: Mate with equipment mounted to the interior of cabinets for non-tactical applications.

General: SC connectors are not for use with patch panels anywhere. SC connectors may be used on any non-tactical equipment, shock isolated or non-shock isolated.

Part Description	Manufacturer	Part Number
SC connector, commercial, 125 um, Multimode, for 3 mm OD cable	AMP	503948-1
SC connector, commercial, 125 um, Multimode, for 2 mm OD cable	AMP	504931-1
Polishing puck, ST & SC connector compatible (See Logistic Support Note)	Kitco	0700-1750
Hand (crimp) tool with die, SC connector (see Logistic Support Note)	AMP	503911-1

Note: NSWCCD-SSES, Philadelphia is in the process of evaluating commercial-off-the-shelf components for non-tactical shipboard applications.

• ST Connector Termination Kit (NSWCDD approved to NAVSEA Drawing 6872811).

Applications: Termination of ST connectors onto the ends of fiber optic cable.

Part Description	Manufacturer	Part Number
Termination kit, ST connector	Kitco	0801-8010
Termination kit consumables, ST	Kitco	0801-9000
	Lucent	D182038

MIL-SPEC VERSUS COMMERCIAL COMPONENTS WITH APPROPRIATE USES

EPOXY TYPES & THEIR APPROPRIATE USES SUMMARY GUIDE

- **First Article Epoxy (approved to MIL-A-24792).**

Applications: All cable runs connected to fiber optic cable plant backbones, all cable drops for tactical applications.

Part Description	Manufacturer	# of Bipacks	Part Number
Epoxy, two part, fiber optic, room/heat cured, pre-mixed bipacks	Lucent	8 gm bipacks, Qty: 15 1/ 2/	105 489 355
	Tra-Con, Inc.	2 gm bipacks, Qty: 1	BA-FS387 or BA-F112 3/
		7 gm bipacks, Qty: 1	BB-FS387 or BB-F112 3/
		28 gm bipacks, Qty: 1	BC-FS387 or BC-F112 3/
		1 gm minipackets, Qty: 6	BY-FS387 or BY-F112 3/

1/ Also included as part of ST connector termination kit consumables, Lucent part number D182038.
2/ Tra-Con, Inc. epoxy supplied with ST connector termination kit, Kitco part number 0801-8010 unless Lucent epoxy is requested.
3/ F112 is new part number for same epoxy formerly listed as FS387.

- **Alternative Commercial Epoxy (not approved to MIL-A-24792).**

Note: The epoxy type listed below was found to be the only acceptable non-tactical application alternative for the epoxy and no epoxy systems tested.

Applications:

Tactical: None. MIL-A-24792 approved epoxy must be used.

Non-Tactical: Cable drops for non-tactical applications, ST connector/SC connector jumpers (patch cords) that mate with equipment and patch panels mounted to the interior of cabinets for non-tactical applications.

Part Description	Manufacturer	Item & Quantity	Part Number
Epoxy, anaerobic, fiber optic, adhesive and primer	Lucent	Adhesive, 10 ml bottle, Qty: 1	106 730 856
		Primer, 1 oz bottle, Qty: 1	106 730 849

DOC: EPOXYUSE.DOC

DEPARTMENT OF THE NAVY
NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION

IN REPLY REFER TO

9504
Ser 9542/09

May 30 1997

From: Commander, Carderock Division, Naval Surface Warfare Center,
Ship Systems Engineering Station, Philadelphia, PA 19112-5083

To: Commander, Naval Sea Systems Command (SEA 03J2)

Subj: **CRITERIA FOR SHIPBOARD USAGE OF MILITARY FIBER OPTIC COMPONENTS, SECOND UPDATE**

Ref: (a) NSWCCD-SSES LTR 9504 Ser 9524/255 of 21 Aug 95
(b) NSWCCD-SSES LTR 9504 Ser 9542/07 of 2 May 1997

Encl: (1) CRITERIA FOR SHIPBOARD USAGE OF MILITARY FIBER OPTIC COMPONENTS of 21 Aug 97

1. This letter re-addresses the general criteria for using military fiber optic components onboard Naval ships. Military components are those which were tested to and meet a military specification, either Qualified Products List (QPL) or first article. This subject was addressed previously in references (a) and (b). Recent applications makes necessary the need to provide more specific detail for the ST connector and optical connection at the equipment interface.

2. In general, military components are required for inter-compartmental and tactical fiber optic cable plant components. Nontactical components may be commercial components, depending upon the specific application. Enclosure (1) is a summary of usage for both military and commercial, fiber optic, cable plant components.

3. Recently, unofficial "guidance" has circulated that MIL-C-83522/16 QPL ST connectors must be used on the fiber optic cable plant backbone and commercial ST connectors can be used on the cable drops. This guidance was provided for particular SPAWARS administrative LAN's, had to do with cable and not ST connectors and does not encompass all fiber optic cable plant networks. The following criteria is to be applied:

a. QPL ST connectors are to be used on all fiber optic cable plant backbones.
b. QPL ST connectors are to be used on all cable drops for tactical applications.
c. Commercial ST connectors may be used on cable drops for nontactical applications.

4. Recently, unofficial "guidance" has circulated that MIL-C-83522/16 QPL ST connectors are not required for fiber optic equipment mounted inside shock mounted racks. Equipment includes switches, multiplexers, routers and concentrators (hubs). The following criteria is to be applied for both tactical and nontactical applications:

a. QPL ST connectors should be used on all cable runs connected to the fiber optic cable plant backbones.
b. Commercial ST connectors should not be mated to the QPL ST connectors with the stiffer spring constant (such as at the shock mounted rack patch panel).
c. Commercial ST connectors may be used to mate with adapters on commercial interface cards which includes Network Interface Cards (NIC cards).
d. ST connectors are not to be used on the cabinet exterior and for other external connections on tactical applications.

5. Advisory: Tabs (pins) breaking off the ST adapter on commercial interface cards. There have been reports of tabs breaking off the ST adapters on commercial interface cards that are mated with the QPL ST connectors. The following criteria should be applied when determining the suitability of mating QPL ST connectors with commercial interface cards:

a. Commercial ST connectors are to be used for mating with plastic ST adapters on commercial interface cards (including NIC cards). The stiffer spring constant on the QPL ST connectors tend to shear off the pins on plastic ST adapters.
b. Evaluate the compatibility of the ST adapter on any commercial interface card with a QPL ST connector. Tabs may tend to break off or wear down quickly on adapters made from materials such as softer metals.

6. Advisory: Use of commercial connectors (ST or multiple termini) at the equipment panel or cabinet. This advisory addresses separately three cases: cabinets with internal shock isolation, cabinets with external shock isolation, cabinets with no shock isolation.

a. Cabinets with internal shock isolation. Some cabinets are specified as "shock isolated"; however, only the interior to the cabinet is shock isolated.

Commercial ST connectors may be used to mate with equipment and patch panels mounted to the interior of these type "shock isolated" cabinets for tactical applications. Non-shock hardened versions of MIL-C-28876 multiple termini connectors are not to be used at the cabinet exterior for tactical applications.

b. Cabinets with external shock isolation. Commercial ST connectors may be used to mate with equipment and patch panels mounted to the interior of these type "shock isolated" cabinets for tactical applications. Non-shock hardened versions of MIL-C-28876 multiple termini connectors may be used at the cabinet exterior for tactical applications.
c. Cabinets with no shock isolation. Commercial ST connectors are not to be used to mate with equipment and patch panels mounted to the interior of a non-shock isolated cabinet for tactical applications. Non-shock hardened versions of MIL-C-28876 multiple termini connectors are not to be used at the cabinet exterior for tactical applications.

7. The SC connector is the only type fiber optic connection supplied with some commercial equipment which includes switches, multiplexers, routers and concentrators (hubs). The following criteria is to be applied for SC connector use:

a. The SC connector is to be used only at the SC adapter interface with the commercial equipment.
b. The SC connector is not to be used to mate with commercial equipment for any tactical application unless the commercial equipment is shock isolated.
c. The SC connector is not to be used on the cable plant, any cable runs to the fiber optic cable plant backbones or any patch panel within the panel/cabinet.
d. The ST connector (not SC connector) is to be specified as the mating optical connection for military specified equipment.
e. The SC connector is not supported logistically. The sponsoring activity is responsible for repairs and other support required for the SC connector.

8. SPAWAR recommended that thermoset cable be used on the backbone and thermoplastic cable be used on cable drops for cable plants requiring thermoset cable. This recommendation may be extended to non-SPAWARS applications except where cable drops re-enter cable ways.

9. NSWCCD-SSES point of contact and NAVSEA technical agent for fiber optic component QPL is E. Bluebond. He can be contacted at (215) 897-8510, Fax (215) 897-8509.

J. P. COPPOLA

Copy to:
NAVSEA 03J21 (H. Lewis)
NAVSEA 03J21 (K. Long)
NAVSEA 03J21 (C. Courchaine)
NSWCDD B35 (G. Brown)
DSCC-VQP (A. Eschmeyer)
DSCC-VQP (R. Wallace)
NSWCCD-SSES 954,9542 (2)

CRITERIA FOR SHIPBOARD USAGE OF MILITARY FIBER OPTIC COMPONENTS

Note: This page is Enclosure (1) of NSWCCD-SSES ltr 9504 Ser 9542/09 of 30 May 1997.

Ref: (a) Military Standard MIL-STD-2052A (SH) Fiber Optic Systems Design, Draft
(b) NSWCCD-SSES ltr 9504 Ser 9524/338 of 1 Apr 96

1. In general, military components are required for intercompartmental and tactical fiber optic cable plant components. Nontactical components may be commercial components, depending upon the specific application. Reference (a) provides specific guidance for the various cable plant components (5.2.1 through 5.2.8). A summary of this reference is as follows:

a. Optical fiber: Use MIL-F-49291 fiber in tactical applications.
b. Cable: Use MIL-C-85045 cable in intercompartmental tactical and nontactical, and intracompartmental tactical applications.
c. Single terminus connectors: Use MIL-C-83522/16 connectors in tactical applications.
d. Multiple termini connectors: Use MIL-C-28876 connectors in tactical applications.
e. Splices: Use MIL-S-24623/4 splices in tactical applications.
f. Switch: Use MIL-S-24725 switches in tactical applications.
g. Interconnection box: Use MIL-I-24728 boxes in tactical and nontactical applications.

2. The components listed above are QPL components; however, not all components are qualified to date. Reference (b) is the latest revision to the Navy recommended fiber optic component parts list. This parts list, provided to users, has both qualified (QPL) components and recommended components. The recommended components are those going through the QPL process, but not yet qualified. Once one vendor qualifies a component, the component is to be purchased from that vendor until additional vendors are qualified. The next revision of reference (b) is scheduled for July 1997.

NATIONAL STOCK NUMBERS (NSN's) FOR RECOMMENDED FIBER OTPIC COMPONENTS SUMMARY GUIDE

Rev A: 10 October 1997

Table I. NSN's for QPL Components 1/

Description	MIL-SPEC Part No.	NSN	Mfr 2/
Fiber Splice & Splice Trays			
Rotary splice (1 pack, 12 letter code "M" splices with 12 "B" clips)	M24623/04-01	9N 6060-01-424-1094	Lucent
Rotary splice tray, non shock hardened	M24623/04-02	9N 6080-01-424-0564	N/A
Rotary splice tray, shock hardened	M24623/04-03	9N 6080-01-434-9072	N/A
Interconnection (IC) Boxes			
Box, sized for two 48 adapter patch panels, with cable entrance	M24728/2-005	9N 5895-01-424-7242	N/A
Box, sized for two 48 adapter patch panels, with cable entrance	M24728/3-001	9N 5895-01-424-7244	N/A
Box, sized for three 48 adapter patch panels, without cable entrances	M24728/3-004	9N 5895-01-424-7246	N/A
Box, sized for one 8 adapter patch panel, without cable entrances	M24728/4-001	9N 5895-01-417-8698	N/A
Box, sized for one 16 adapter patch panel, without cable entrances	M24728/5-001	9N 5895-01-424-7245	N/A
Box, sized for one 16 adapter patch panel, without cable entrances	M24728/6-001	9N 6099-01-417-8374	N/A
Splice tray holder	M24728/7-001	9N 6080-01-424-1099	N/A
Multiple Removable Termini Connector			
Connector, four termini, receptacle, wall mount, with insert retention nut	M28876/1-B1S1	9N 6060-01-419-7858	N/A
Connector, eight termini, receptacle, wall mount, with insert retention nut	M28876/1-C1S1	9N 6060-01-315-6362	N/A
Connector, four termini, plug, no strain relief, with insert retention nut	M28876/6-B1P1	9N 6060-01-413-7239	N/A
Connector, four termini, plug, no strain relief, no insert retention nut	M28876/6-B1P1N	9N 6060-01-423-1019	N/A
Connector, eight termini, plug, no strain relief, with insert retention nut	M28876/6-C1P1	9N 6060-01-315-2816	N/A
Connector, eight termini, plug, no strain relief, no insert retention nut	M28876/6-C1P1N	9N 6060-01-423-1015	N/A
Connector, four termini, plug, straight backshell with strain relief for four fiber cable	M28876/7-B12P1	9N 6060-01-423-1017	N/A
Connector, eight termini, plug, straight backshell with strain relief for eight fiber cable	M28876/7-C11P1	9N 6060-01-423-1020	N/A

DOC: NSNLIST.DOC

NATIONAL STOCK NUMBERS (NSN's) FOR RECOMMENDED FIBER OTPIC COMPONENTS SUMMARY GUIDE

Rev A: 13 March 1998

Table I. NSN's for QPL Components (Continued) 1/

Description	MIL-SPEC Part No.	NSN	Mfr 2/
Multiple Removable Termini Connector			
Connector, four termini, plug, 45° backshell with strain relief for four fiber cable	M28876/8-B12P1	9N 6060-01-423-1021	N/A
Connector, eight termini, plug, 45° backshell with strain relief for eight fiber cable	M28876/8-C11P1	9N 6060-01-423-1026	N/A
Connector, four termini, plug, 90° backshell with strain relief for four fiber cable	M28876/9-B12P1	9N 6060-01-423-1022	N/A
Connector, eight termini, plug, 90° backshell with strain relief for eight fiber cable	M28876/9-C11P1	9N 6060-01-423-1016	N/A
Multiple Termini, Connector, Removable (for MIL-C-28876 Connectors)			
Termini, pin, long length, ceramic guide bushing, MM, with crimp sleeve, for MIL-C-28876 connectors	M29504/14-4131C	9N 6060-01-424-1718	N/A
Termini, socket, long length, ceramic guide bushing, MM, with crimp sleeve, for MIL-C-28876 connectors	M29504/15-4171C	9N 6060-01-424-2293	N/A
Termini, dummy, for MIL-C-28876 connectors	M29504/3-4038	9N 6060-01-384-1760	N/A
ST Connectors			
ST connector, non locking boot, 125 micron, MM	M83522/16-DNX	TO BE ASSIGNED	N/A
ST connector, non locking boot, 125 micron, SM/MM	M83522/16-DNY	TO BE ASSIGNED	N/A
ST to ST adapter, 125 micron, MM	M83522/17-NX	9N 6060-01-433-2836	N/A
ST to ST adapter, 125 micron, SM/MM	M83522/17-NY	9N 6060-01-423-1029	N/A
Cable			
Eight fiber, thermoplastic, MM, 500 MHz BW, high pressure (-01P), or low pressure (-01N)	M85045/13-01P or M85045/13-01N	9N 6015-01-392-4051	N/A
Four fiber, thermoplastic, MM, 500 MHz BW, high pressure (-01P), or low pressure (-01N)	M85045/15-01P or M85045/15-01N	TO BE ASSIGNED	N/A
One fiber, OFCC, MM, 500 MHz BW, low pressure	M85045/16-01	9N 6015-01-422-6487	N/A
One fiber, OFCC, SM, low pressure	M85045/16-02	9N 6015-01-422-6500	N/A
Eight fiber, crosslinked, MM, 500 MHz BW, low pressure	M85045/17-01N	9N 6015-01-422-6505	N/A
Four fiber, crosslinked, MM, 500 MHz BW, low pressure	M85045/18-01N	9N 6015-01-422-6506	N/A
Stuffing Tube Assemblies for 4 and 8 Fiber Cable			
Stuffing tube, nylon, straight tube, tube size 2, for 4 fiber cable	M19622/1-002	5975-00-296-4093	N/A
Packing assembly, for nylon stuffing tube, 4 fiber cable	M19622/17-0001	5330-00-202-2589	N/A
O-ring, for nylon stuffing tube, 4 fiber cable	MS28755-214	5330-00-165-1941	N/A
Stuffing tube, nylon, straight tube, tube size 3, for 8 fiber cable	M19622/1-003	5975-00-877-6975	N/A
Packing assembly, for nylon stuffing tube, 8 fiber cable	M19622/18-0018	5330-00-202-2590	N/A
O-ring, for nylon stuffing tube, 8 fiber cable	MS28755-216	5330-00-165-1942	N/A

NATIONAL STOCK NUMBERS (NSN's) FOR RECOMMENDED FIBER OTPIC COMPONENTS SUMMARY GUIDE

Rev B: 10 Oct 1997

Table II. NSN's For Commercial, Non QPL, Components 1/

Description	Commercial Part No.	NSN	Mfr 2/
Ruggedized, Commercial, ST Connector			
ST connector, non QPL, commercial-ruggedized, non locking boot, 125 micron, alumina ferrule, SS body, MM	Com Code 105 753 669	9N 6060-01-382-6245	Lucent

Table III. NSN's for Kits, Support Items and Consumables 1/

Description	NAVSEA DWG/ Commercial Part No.	NSN	Mfr 2/
Termination Kits			
ST connector termination kit	DWG 6872811	1H 5180 01 416 0565	N/A
MIL-C-28876 multiple termini (MT) connector termination kit	DWG 6872813	1H 5180 01 417 1968	N/A
MIL-S-24623/4 fiber (rotary) splice termination kit	DWG 6872812	1H 5180 01 416 0567	N/A
Termination kit consumables, ST connector	D-182038	9N 6080-01-358-9686	Lucent
Measurement quality jumper sets			
ST set: one item 6877804-01 & two items 6877804-05	DWG 6877804	1H 6020 01 426 4487	N/A
Rotary splice set: one item 6877804-02 & two items 6877804-06	DWG 6877804	1H 6020 01 426 4489	N/A
MT shell size 13 (4 channel) set: one item 6877804-03, one item 6877804-04, two items 6877804-07, two items 6877804-08	DWG 6877804	1H 6020 01 426 4484	N/A
MT shell size 15 (8 channel) set: one item 6877804-03, one item 6877804-04, two items 6877804-09, two items 6877804-10	DWG 6877804	1H 6020 01 426 4499	N/A

NOTES:

1/ NSN's for other components are in the process of being assigned.

2/ N/A = Not Applicable, can be supplied by any vendor on QPL.

COMPONENT DEFICIENCY POLICY

Rev A: 10 October 1997

1. Background. Recent cable deficiency identification and containment has occurred after significant quantities have been shipped and installed. The policy listed below is to be implemented to minimize the Fleet impact for receipt of deficient components/material. This implementation is by direction of Naval Sea Systems Command Fiber Optic Program Office (NAVSEA 03J2) and the Navy Information Technology Umbrella Program (SPAWAR PD 15Q).

2. End user responsibility. Within 24 hours from the identification of deficient components/material, the end user (such as installing activity) is to notify NSWCCD-SSES of the deficiency. NSWCCD-SSES point of contact is E. Bluebond. Notification is to be sent by FAX: (215) 897-8509 or E-mail: bluebond@mailgate.navsses.navy.mil. Notification is to include deficiency description, points of contact, available product information (manufacturer, lot numbers, model, purchase document, etc.), installation status (quantity installed, quantity removed, quantity remaining in stock/warehouse, network/system in which component is installed).

3. NSWCCD-SSES responsibility. Upon notification of a deficient condition, NSWCCD-SSES is to immediately take action to confirm that the deficiency is valid. If confirmation is made, NSWCCD-SSES is to immediately implement a stop shipment (through DSCC-VQP for QPL deficient components/material), then investigate the deficient components/material. This investigation includes a site visit, sample analysis, working with the manufacturer to identify the problem and implement appropriate corrective action, specifying any re-testing, reviewing proposed corrective action and re-tests, recommending approval and re-shipment of corrected product. User community is to be notified once the existence of a deficiency is ascertained.

4. DSCC-VQP responsibility. DSCC-VQP will issue a stop shipment letter upon being contacted by NSWCCD-SSES for any deficient components/material on a fiber optic component QPL. DSCC-VQP will review any corrective actions taken and tests specified by NSWCCD-SSES that need to be performed prior to granting approval for re-shipment.

5. Deficient components/material user alert list. Notification to the user community of a deficient components/material will be done through E-mail. Users must complete the form on the next page to be included in future notifications.

6. Concluding remarks. Recent events necessitate that a stop shipment of product be issued immediately after deficient components/material identification is validated to minimize impact to the Fleet. End users must bring deficient components/material to the attention of NSWCCD-SSES in an expeditious manner. Likewise, NSWCCD-SSES must expeditiously determine if a deficiency exists, participate in corrective actions, specify applicable re-testing and take action to notify the user community.

DOC: NOGOOD.DOC

COMPONENT DEFICIENCY POLICY

8 October 1997

Activity/Company:_____

Code/Mail Stop:_____(Building:_____Room:_____)

Attention (Name):_____

Street Address:_____

City:_____State:_____Zip Code+4_____

Telephone Number:_____FAX:_____

E-mail:_____

Date of Request:_____

Please FAX completed form to NSWCCD-SSES point of contact:

Eric Bluebond
Telephone: (215) 897-8510
FAX: (215) 897-8509

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

27 October 1997

INTRODUCTION

Generic fiber optic documentation suitable for adaptation by acquisition program offices for specific systems have been developed. This listing includes all of the documents available.

The following planning and related documents supporting the Fiber Optic Topology Cable Plant/Network programs have been developed and are ready (as stated) for distribution as required.

1. **OPNAVINST 2710.1A Standards for Commercial Local Area Networks (LANS) on Navy Ships, Sep 96 (DRAFT REVISION).**

   Sets Navy policy and guidance for shipboard Local Area Networks. Applies to interoperability or interfacability of the many information systems that are planned for Navy ships, as well as those currently on Navy ships.

2. **MIL-STD-2042A (SH) Fiber Optic Topology Installation Standard Methods for Naval Ships, Sep 96.**

   Provides detailed information and guidance to personnel concerned with the installation of fiber optic topologies on Naval Surface ships and submarines. Intended to standardize and minimize variations in such installations.

3. **MIL-HDBK-2051 (SH) Fiber Optic Shipboard Cable Topology Design Guidance,May 96**.

   Contains design rules and guidelines for defining a fiber optic topology. Primarily intended for use by the fiber optic topology program manager and design engineer.

4. **MIL-STD-2052A (SH) Fiber Optic Systems Design, Oct 97**.

   Provides detailed information, guidelines, procedures, and requirements for selecting fiber optic components required for transmitting optical signals through and between points in Navy command, control, communications, and telemetry systems.

5. **Navy Ships' Technical Manual, S9086-PF-STM-010, Chapter 408 - Fiber Optic Cable Topology, Operation, Maintenance, and Repair, First Revision, Aug 96.**

   Describes operation and maintenance of fiber optic systems for the training and use of both user and installation personnel. It focuses on fiber optic topology components, i.e., those that are installed between equipment.

6. **Navy Electricity and Electronics Training Series, 0507-22-LP-218-0100, Module 24 - Introduction to Fiber Optics, 1 Aug 92.**

   An introductory training module, presenting general information on fiber optics and optical fibers. Provides background and concepts; as well as information on optical fibers and cables; optical splices, connectors, and couplers; fiber optic measurement techniques; optical sources and fiber optic transmitters; optical detectors and fiber optic receivers; and fiber optic systems.

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

7. General Specifications for Ships of the United States Navy, Section 408 - Fiber Optic Cable Systems, Feb 97 (DRAFT).

Covers the application, selection, and installation of fiber optic cable systems required for interior communication, weapons control, electronics systems, process control systems, ship propulsion and control systems and other systems described in other sections of these specifications that may employ fiber optic cable.

8. NAVSEA Standard Item No. 009-73, Shipboard Electrical/Electronic/Fiber Optic Cable; Remove, Relocate, Repair, and Install, Sep 96.

For installation activities, e.g., shipyards, to use to ensure that fiber optics are installed and overhauled properly. It is invoked by contract.

9. Calibration Support Plan for Fiber Optic Cable Plant, Rev 2, Jan 97

Provides details of planning for expansion of interim fiber optic calibration support capabilities and the eventual transition to permanent support. It identifies and ensures the coordination of ongoing and planned actions by the activities with fiber optic calibration support responsibilities.

10. Configuration Management Plan for Fiber Optic Cable Plant, May 93.

Establishes a system of uniform identification, control, accounting and audits for hardware that comprises the shipboard Fiber Optic Cable Plant system.

11. NTP S-30-9304 Fiber Optic Cable Repair Navy Training Plan, Revision A, Jan 97 (DRAFT).

Identifies a generic subset of the training and training resource requirements for emerging Navy and Marine Corps fiber optic cable applications. Defines the training for a new technology; i.e., fiber optic cable repair, rather than any specific platform, system, subsystem or equipment, and is therefore not tied to any specific acquisition program.

12. Integrated Logistics Support Plan for Fiber Optic Cable Plant, Sep 94

Identifies the essential support elements, management objectives, tasks, and events associated with the development and implementation of ILS for a shipboard fiber optic cable plant.

13. Maintenance Plan for Fiber Optic Cable Plant, Apr 94

Developed in accordance with NAVSEAINST 5000.39. Declares passive nature of fiber optic cabling, and thus avoidance of preventive maintenance activities. O-level, I-level, and D-level maintenance is discussed.

14. Shipboard Fiber Optic Topology Installation, Testing, and Acceptance Guide, Sep 94.

Promotes standardized procedures that can be invoked in Shipboard Fiber Optic Topology installation contracts and provides guidance to prospective contractors on Navy expectations for FOT installation contracts. [Also, see NAVSEA Standard Item No. 009-73, above].

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

15. Shore Intermediate Maintenance Activity (SIMA) Fiber Optic Repair Capabilities Plan, Feb 94.

Provides a comprehensive plan for ensuring fiber optic repair, installation, and calibration support for the Fleet. Identifies and ensures the coordination of ongoing and planned actions by activities with SIMA Norfolk fiber optic cable repair and GPETE calibration support responsibilities.

16. Supply Support Management Plan for Fiber Optic Cable Plant, Sep 94.

Designed as a "road map" to aid the Principal Support Agent (PSA) with its responsibilities regarding the fiber optic cable plant program. Assists program managers by helping to measure progress toward full system supply support. Plan is designed to be evolutionary.

17. Installation Verification Plan for Fiber Optic Cable Plant, Apr 96.

Provides a basic framework for a generic Fiber Optic Cable Plant (FOCP) verification and should be tailored to meet the needs of each particular FOCP installation. Where applicable, checks are referenced to a source document; however, some checks without reference are included that conform to good engineering and industry accepted practices.

18 NAVSEA Drawings, Tool Kits, Fiber Optic, Navy Shipboard, Jun 95.

- NAVSEA Drawing 6872811, Tool Kit, MIL-C-83522, Fiber Optic, Navy Shipboard [Fiber Optic ST Connector]
- NAVSEA Drawing 6872812, Tool Kit, MIL-S-24623, Fiber Optic, Navy Shipboard [Fiber Optic Splice]
- NAVSEA Drawing 6872813, Tool Kit, MIL-C-28876, Fiber Optic, Navy Shipboard [Fiber Optic Heavy Duty Connector]
- NAVSEA Drawing 6877804, Jumpers, Test Equipment, Fiber Optic
- NAVSEA Drawing 6877992, Restoration Kit, Cable, Fiber Optic

DOC: ILSLIST.DOC

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

19. Fiber Optic Military Standards and Specifications

The below listed MIL-SPEC's, MIL-STD's, and related fiber optic documents may be obtained from:

A. Navy Publications and Forms Center, Phila.; For Customer No: (215) 697-2179, Order No: (215) 697-1187

B. NAVSEA NC-3 Library order line to Navy Publications Center

C. NAVSEA 03J2 (See NAVSEA Recommended FO Components Request Form)

MIL-SPEC #	SLASH	DATE	TITLE/DESCRIPTION *
MIL-STD-2042A(SH)		Sep 96	FO Topology Installation Standard Methods for Naval Ships
MIL-STD-2042(SH)	2042-1(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Cables)
MIL-STD-2042(SH)	2042-2(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Equipment)
MIL-STD-2042(SH)	2042-3(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Cable Penetration)
MIL-STD-2042(SH)	2042-4(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Cableways)
MIL-STD-2042(SH)	2042-5(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Connectors/Interconnections)
MIL-STD-2042(SH)	2042-6(SH)	7Jul92	FO Topology Installation Standard Methods for Naval Ships (Testing)
MIL-STD-2051(SH)		21Apr94	Fiber Optic Shipboard Cable Topology Design Guidance
MIL-STD-2052A(SH)		Oct 97	Military Standard Fiber Optic Systems Design
MIL-A-24792		31May95	Adhesive, Epoxy, Two Part, Fiber Optics
MIL-A-24793		1Jun95	Adhesive, UV Curable, One Part, Fiber Optics
MIL-C-28876D		9Jul92	Connectors, FO Circulr, Plug & Recptcl Style, Multi Removbl Termini, Gen Spec for
	Amendment 1	4May95	
MIL-C-28876D	28876/01D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/o Strain Relief, Env.Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/02D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/Strt Strain Relief, Env Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/03D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/45E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/04D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/90E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/05D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/Strt Strain Relief, Envirnmt Resist
	Amendment 1	4May95	

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

MIL-SPEC #	SLASH	DATE	TITLE/DESCRIPTION *
MIL-C-28876D	28876/06D	9Jul92	Connectors, FO Circular, Plug Style, Multi Remvbl Termini, Screw Threads, Wall Mntg. w/o Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/07D	9Jul92	Connectors, FO Circular, Plug Style, Multi Remvbl Termini, Screw Threads, Wall Mntg. w/Strt Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/08D	9Jul92	Connectors, FO Circular, Plug Style, Multi Remvbl Termini, Screw Threads, Wall Mntg. w/45E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/09D	9Jul92	Connectors, FO Circulr, Plug Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/90E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/10D	9Jul92	Connectors, FO Circular, Plug Style, Multi Removable Termini, Dust Cover, Screw Threads, Envirnmt Resistant
MIL-C-28876D	28876/11D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Jamnut Mntg. w/o Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/12D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Jamnut Mntg. w/Strt Strain Relief, Env. Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/13D	9Jul92	Connectors, FO Circular, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/45E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/14D	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. w/90E Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/15D	9Jul92	Connectors, FO Circular, Receptacle Style, Multi Removable Termini, Dust Cover, Environment Resist
MIL-C-28876D	28876/26C	9Jul92	Connectors, FO Circulr, Recptcl Style, Multi Remvbl Termini, Screw Thrds, Wall Mntg. W/Short-Backshell, Non-Envirnmt
MIL-C-28876D	28876/27C	9Jul92	Connectors, FO Circulr, Plug&Recptcl Style, Multi Remvbl Termini, Screw Thrds, Strt Backshell, Strain Relief, Env. Resist
	Amendment 1	4May95	

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MIL-SPEC #	SLASH	DATE	TITLE/DESCRIPTION *
MIL-C-28876D	28876/28C	9Jul92	Connectors, FO Circulr, Plug&Recptcl Style, Multi Remvbl Termini, Screw Thrds, 45E Backshell, /Strain Relief, Env Resist
	Amendment 1	4May95	
MIL-C-28876D	28876/29C	9Jul92	Connectors, FO Circulr, Plug&Recptcl Style, Multi Remvbl Termini, Screw Thrds, 90E Backshell, W/Strain Relief, Envirnmt Resist
	Amendment 1	4May95	
MIL-C-83522D		25Jun92	Connectors, Fiber Optic, Single Terminus, General Specification for
	A mendment 1	11May95	
MIL-C-83522D		25Jun92	Connectors, Fiber Optic, Single Terminus, General Specification for
	Amendment 1	11May95	
MIL-C-83522D	83522/16B	11May95	Connectors, Fiber Optic, Single Terminus, Plug, Adapter Style, 2.5mm Bayonet Coupling, Epoxy
MIL-C-83522D	83522/17B	11May95	Connectors, Fiber Optic, Single Terminus, Adapter Style, 2.5mm Bayonet Coupling, Bulkhead Panel Mount
MIL-C-83522D	83522/18B	11May95	Connectors, Fiber Optic, Single Terminus, Adapter Style, 2.5mm Bayonet Coupling, PC Mount
MIL-C-85045E		21May92	Cables, Fiber Optics, (METRIC), General Specification for
	Amendment 1	26May95	
MIL-C-85045E	85045/13B	26May95	Cable, Fiber Optic, 8-Fibers, Cable Configuration, Type 2 (OFCC), Application B (Shipboard), CCSM/mm (Metric)
MIL-C-85045E	85045/14B	26May95	Cable, Fiber Optic, 1-Fiber, Cable Configuration, Type 2 (Pigtail), Loose Tube, CCSM/mm (Metric)
MIL-C-85045E	85045/15A	26May95	Cable, Fiber Optic, 4-Fibers, Cable Configuration, Type 2 (OFCC), Application B (Shipboard), CCSM/mm (Metric)
MIL-C-85045E	85045/16A	26May95	Cable, Fiber Optic, 1-Fiber, Cable Configuration, Type 2 (Pigtail), Tight Buffered, CCSM/mm (Metric)
MIL-C-85045E	85045/17A	26May95	Cable, Fiber Optic Cross linked, 8-Fiber, Cable Configuration, Type 2 (OFCC), Appl. B (Shipboard), CCSM/mm (Metric)
MIL-C-85045E	85045/18A	26May95	Cable, Fiber Optic Cross linked, 4-Fiber, Cable Configuration, Type 2 (Pigtail), Appl. B (Shipboard), CCSM/mm (Metric)
MIL-C-85045E	85045/19	26May95	Cable, Fiber Optic, 24-tO-36-Fibers, Cable Configuration, Type 2 (OFCC), Appl. B (Shipboard), CCSM/mm (Metric)
MIL-C-85045E	85045/20	26May95	Cable, Fiber Optic Crosslink, 24-To-36 Fibers, Cable Configuration, Type 2 (OFCC), Appl. B (Shipboard), CCSM/mm (Metric)
MIL-E-24142B(SH)		25Jan84	Enclosures for Electrical Fitting and Fixtures, General Specification for

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

MIL-SPEC #	SLASH	DATE	TITLE/DESCRIPTION *
MIL-F-49291B		8Jul92	Fiber Optical, (Metric) General Specification for
	Amendment 1	12Jul94	
MIL-F-49291B	49291/6B	29Nov94	Fiber Optical, 62.5/125 Micrometers, Radiation Hardened (Metric)
MIL-F-49291B	49291/7B	29Nov94	Fiber Optical, Single-Mode, Dispersion Unshift Radiation Hardened (Metric)
MIL-I-24728A		23Jul92	Interconnection Box, Fiber Optic, Metric, General Specification for
	Amendment 1	1Jun95	
MIL-I-24728A	24728/1B	1Jun95	Interconnection Box, Fiber Optic, Submersible, 254 X 330 mm
MIL-I-24728A	24728/2B	1Jun95	Interconnection Box, Fiber Optic, Submersible, 304.8 X 609.6 mm
MIL-I-24728A	24728/3	1Jun95	Interconnection Box, Fiber Optic, Submersible, 406.4 X 863.6 mm
MIL-I-24728A	24728/4	1Jun95	Interconnection Box, Fiber Optic, Submersible, 101.6 X 177.8 mm
MIL-I-24728A	24728/5	1Jun95	Interconnection Box, Fiber Optic, Submersible, 152.4 X 228.6 mm
MIL-I-24728A	24728/6	1Jun95	Interconnection Box, Fiber Optic, Connector Patch Panel Module
MIL-I-24728A	24728/7	1Jun95	Interconnection Box, Fiber Optic, Splice Tray Holder Module
MIL-M-24794		25May95	Material, Index Matching, Fiber Optics
MIL-M-24791		25May95	Module, Fiber Optic, Transmitter Or Receiver, Digital, General Specification For
MIL-M-24791	24791/1	25May95	Module, Fiber Optic, Transmitter, Digital, 160 MBD, Associated Detail Specification For
MIL-M-24791	24791/2	25May95	Module, Fiber Optic, Receiver, Digital, 160 MBD, Associated Detail Specification For
MIL-S-24623B		10Jun91	Splice, Fiber Optic Cable, General Specification for (Metric)
	Amendment 1	21Jun95	
MIL-S-24623B	24623/4B	21Jun95	Splice, Fiber Optic Housing, Fiber
MIL-S-19622E		24Jun86	Stuffing Tubes, Nylon, General Specification for
	Supplement 1	24 Jun86	
MIL-S-24725		29Nov94	Switches, Fiber Optic, Shipboard (Metric), General Specification for
MIL-S-24725	24725/1A	29Nov94	Switch, Fiber Optic, Shipboard, Electrical Nonlatching, Bypass, Multimode Cable, Stand-Alone (Metric)
MIL-S-24725	24725/2	29Nov94	Switch, Fiber Optic, Shipboard, Nonhard Mounted, Electrical Nonlatching, Bypass, Multimode Cable, Stand-Alone (Metric)
MIL-T-29504		19Dec89	Termini, Fiber Optic Connector, Removable, General Spcification For
	Supplement 1	19Dec89	
	Amendment 1	4May95	
MIL-T-29504	29504/3A	19Dec89	Termini, FO Connector, Remvbl, Envrnmt Resist, Class 2, Type II, Style A, Dummy Terminus (MIL-C-28876 Connector)

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPEC's, MIL-STD's, MIL-HDBK's, QPL's & NAVSEA DRAWINGS

MIL-SPEC #	SLASH	DATE	TITLE/DESCRIPTION *
MIL-T-29504	29504/14	21May92	Termini, FO Connector, Removable, Environment Resistant, Class 5, Type II, Style A, Pin Termini, Front Release, Ceramic Guide Bushing (MIL-C-28876 Connector)
	Amendment 1	4May95	
MIL-T-29504	29504/15	21May92	Termini, FO Connector, Removable, Environment Resistant, Class 5, Type II, Style A, Socket Termini, Front Release, Ceramic Guide Bushing (MIL-C-28876 Connector)
	Amendment 1	4May95	

20. Qualified Products List (QPL)

QPL #	DATE	TITLE/DESCRIPTION *
QPL-28876-12	2 Apr 97	QPL Of Products Qualified Under Military Specification MIL-C-28876, Connectors, Fiber Optic, Circular, Plug And Receptacle Styles, Multiple Removable Termini, General Specification For
QPL-83522-11	2 Apr 97	QPL Of Products Qualified Under Military Specification MIL-C-83522, Connectors, Fiber Optic, Single Terminus, General Specification For
QPL-85045-4	26 Jun 97	QPL Of Products Qualified Under Military Specification MIL-C-85045, Cables, Fiber Optics, General Specification For (Metric)
QPL-49291-3	16 Jan 97	QPL Of Products Qualified Under Military Specification MIL-F-49291, Fiber Optical, General Specification For (Metric)
QPL-24728-3	30 Nov 95	QPL Of Products Qualified Under Military Specification MIL-I-24728, Interconnection Box, Fiber Optic, General Specification For (Metric)
QPL-24623-2	31 Aug 95	QPL Of Products Qualified Under Military Specification MIL-S-24623, Splice, Fiber Optic Cable, General Specification For (Metric)
QPL-29504-9	2 Apr 97	QPL Of Products Qualified Under Military Specification MIL-T-29504, Termini, Fiber Optic Connector, Removable, General Specification For

NAVAL SEA SYSTEMS COMMAND
FIBER OPTIC PROGRAM OFFICE

24 October 1997

NAVY RECOMMENDED FIBER OPTIC COMPONENTS DOCUMENT REQUEST FORM (PAGE 1 0F 2)

FIBER OPTIC CABLE PLANT
ILS DOCUMENTATION, MIL-SPEC's,
MIL-STD's, MIL-HDBK's, QPL's, & NAVSEA DRAWINGS

Activity/Company:_____

Code/Mail Stop:_____(Building:_____ Room:_____)

First Name:_____ Last Name:_____

Street Address:_____

City:_____ State:_____ Zip Code +4:_____-_____

Telephone Number:_____FAX:_____

E-mail address:_____

Please FAX completed form to NAVSEA Fiber Optic Program Logistics Manager,
Dr. Charles Courchaine, SEA 03J2 at FAX: (703) 602-2233/5404.

Note: There is a three document limit per requester.
Military specification requests include the specification sheets.

NAVAL SEA SYSTEMS COMMAND
FIBER OPTIC PROGRAM OFFICE

NAVY RECOMMENDED FIBER OPTIC COMPONENTS REQUEST FORM (PAGE 2 0F 2)

FIBER OPTIC CABLE PLANT ILS DOCUMENTATION, MIL-SPECS, MIL-STDS, MIL-HDBKS, QPLS, & NAVSEA DRAWINGS

Military Specifications:

___ MIL-A-24792
___ MIL-A-24793
___ MIL-C-28876D
___ MIL-C-83522D
___ MIL-C-85045
___ MIL-E-24142B (SH)
___ MIL-F-49291B
___ MIL-I-24728A
___ MIL-M-24794
___ MIL-M-24791
___ MIL-S-24623B
___ MIL-S-19622E
___ MIL-S-24725
___ MIL-T-29504

Qualified Products List:

___ QPL-28876-12
___ QPL-83522-11
___ QPL-85045-4
___ QPL-49291-3
___ QPL-24728-3
___ QPL-24623-2
___ QPL-29504-9

Military Standards:

___ MIL-STD-2042A
___ MIL-STD-2051
___ MIL-STD-2052A

Military Handbooks:

___ MIL-HDBK-2051 (SH)

NAVSEA Drawings:

___ 6872811
___ 6872812
___ 6872813
___ 6877804
___ 6877992

ILS Documentation:

___ T/M S9086-PF-STM-010, Chapter 408, FO Topology, Operation, Maintenance & Repair
___ OPNAVINST 2710.1A, Standards for Commercial LANS on Navy Ships
___ 0507-22-LP-218-0100, Navy Electricity and Electronics Training Series, Module 24
___ General Ship Specifications, Fiber Optic Cable Systems, Section 408
___ NAVSEA Standard Item No. 009-73
___ Calibration Support Plan for FO Cable Plant
___ Configuration Management Plan for FO Cable Plant
___ FO Cable Repair Navy Training Plan; NTP S-30-9304
___ Integrated Logistics Support Plan for FO Cable Plant
___ Maintenance Plan for FO Cable Plant
___ FO Topology Installation, Testing & Acceptance Guide
___ SIMA FO Repair Capabilities Plan for FO Cable Plant
___ Supply Support Management Plan for FO Cable Plant
___ Installation Verification Plan for FO Cable Plant
___ FO Topology & Network Support Five Year Planning Document

DOC: SPECFORM.DOC

FIBER OPTIC CONTRACT VEHICLES

25 March 1998

1. Name of contract: **ViViD (GTE)**

   a. Contract number: N68939-97-D-0041
   b. Organziation/code administering the contract: NCTS Pensacola, N112
   c. Products that can be procured: Telephone switches, switch upgrades, telephone instruments, routers, concentrators, ATM switches, Sonet multiplexers, and microwave equipment. Services under this contract Include installation, maintenance, network design, training, and customized outsourcing.
   d. POC: Grady Bowman, Contracting Officer
      Phone (850) 452-2601 X368; FAX: (850) 452-4574/2864
      Address: NCTS Pensacola
      130 West Ave., Suite B
      Pensacola, FL 32508-5111
      Attn: Grady Bowman Code N112
      POC: Dave Mullins, Contracting Officer's Representative (619) 524-7538
      POC: GTE (617) 455-5560
      For ordering support: Doris Welch, NCTAMS LANT, Norfolk (757) 445-1493
   e. Terms of contract: Contract is 8 years for products and 10 years for services starting 29 July 1997.
   f. Additional information: See Web Site at www.chips.navy.mil/IT.

2. Name of contract: **ViViD (Lucent)**

   a. Contract number: N68939-97-D-0040
   b. Organization/code administering contract: NCTS Pensacola, N112
   c. Products that can be procured: Telephone switches, switch upgrades, telephone instruments, routers, concentrators, ATM switches, Sonet multiplexers, and microwave equipment. Services under this contract include installation, maintenance, network design, training, and customized outsourcing.
   d. POC: Suzanne Shumate, Contracting Officer (850) 452-2601 X232
      Phone (850) 452-2601 X232; FAX (850) 452-4574/2864
      Address: NCTS Pensacola
      130 West Ave., Suite B
      Pensacola, FL 32508-5111
      Attn: Suzanne Shumate Code N112
      POC: Dave Mullins, Contracting Officer's Representative (619) 524-7538
      POC: Lucent (800) 843-4348
      For ordering support: Elaine McDaniel, NCTAMS LANT, Norfolk (757) 445-1493.
   e. Terms of contract: Contract is 8 years for products and 10 years for services starting 29 July 1997.
   f. Additional information: See web site at .

FIBER OPTIC CONTRACT VEHICLES

3. Name of contract: **PRC Superminicomputer Contract**

   a. Contract number: F19630-93-D-0001
   b. Organization/code administering the contract: Central Order Processing Office, NCTS Jacksonville, FL
   c. Successor Contracting Officer: Naval Inventory Control Point, Mechanicsburg, PA
   d. Products that can be procured: Ethernet hardware/software, FDDI, cables, routers, bridges, repeaters, fan-outs, network media, legacy system support.
      Note: Must purchase Superminicomputer (desktop workstation minimum) or network server in order to procure components.
   e. POC: Willie Johnson, (904) 779-6106 or DSN 942-6106
      NCTS Jacksonville
      BLDG 919, Langley Street
      Jacksonville, FL 32212-0111
      Attn: Willie Johnson Code N832 COPO
   f. Terms of contract: Hardware and software available through 1 June 1998. Maintenance and services are available through 31 May 2002.
   g. Delivery: 90 days ARO.

4. Name of contract: **Tactical Advanced Computer-3 (TAC-3)**

   a. Contract number: N66032-92-D-0004
   b. Organization/code administering the contract: SPAWAR IT Contracts Div. Code 025
   c. Products that can be procured: Hardware, software, LAN, for tactical systems.
   d. POC (and COTR): Douglas Romig, (619) 553-4086 or DSN 553-4086
      SPAWAR Systems Center San Diego
      4301 Pacific Highway
      San Diego, CA 92110-3127
      Attn: Douglas Romig Code D4103
   e. Terms of contract: Although the contract expires for procurement of hardware in March, 1996, the dollar ceiling is projected to be reached in December 1995.

5. Name of contract: **Tactical Advanced Computer-4 (TAC-4)**

   a. Contract number: N68939-95-D-0004
   b. Organization/code administering the contract: SPAWAR IT Contracts Div. Code 025
   c. Products that can be procured: Hardware, software, LAN, WAN.
   d. POC (and COTR): Douglas Romig, (619) 553-4086 or DSN 553-4086
      SPAWARSYSCEN San Diego
      4301 Pacific Highway
      San Diego, CA 92110-3127
      Attn: Douglas Romig Code 4103
   e. Terms of contract: TAC-4 will end on 18 January 1998 for all new equipment purchases. Maintenance period will continue until 18 January 2001.
   f. Additional information: See web sites http://tac.nosc.mil, http://www.nswc.navy.mil/Tac-4/, and http//www.hp.com/Fed/tac4/main.html.
      HP Ordering guides: Contact HP at (800) 203-8224.
      Note: The TAC-4 replacement vehicles are the TAC JW (Joint Workstation) BPA's (5 total) released last year. BPA's are based on GSA schedules. Two of these vehicles (DEC and SGI) contain pre-assembled fiber optic cables (6, 12, and 15 feet lengths). No bulk cable at this point.

FIBER OPTIC CONTRACT VEHICLES

6. Name of contract: **ULANA II (EDS)**

   a. Contract number: F34608-94-D-0011
   b. Organization/code administering contract: HQ SSG/PKM, MAFB-Gunter Annex
   c. Products that can be procured: Ethernet, FDDI, ATM. Hardware to maintain, upgrade, or expand an existing LAN. Intending for all aspects of a new or improved LAN system. Contract up for renewal in April 1997. 2 one-year, options for hardware/software. 3 one-year, options for services.
   d. POC: Captain Washington, (334) 416-3759 or DSN 596-3759
      POC: Gabriella Shelden, Customer Advocate (EDS-Herndon, VA)
      Phone: (800) 468-5262, FAX: (703) 742-2543
   e. Delivery: 21 days CONUS ARO; 30 days OCONUS ARO.

7. Name of contract: **PC-LAN+ (EDS)**

   a. Contract No: N68939-95-D-0018
   b. Organization/code administering contract: NCTS, Code: N112
   c. Products that can be procured: SuperServer, server/workstations, communications equipment, network operating systems, cable, office automation software, peripherals, electronic mail, calendar/scheduling and database products. Services under the contract include network design, installation, and services, maintenance, training, documentation, and spare parts.
   d. POC: Christa LeBoeuf, SPAWAR Code PD15Q2, leboeufc@spawar.navy.mil
      POC: EDS, 1-800-241-2143, FAX: 1-800-352-3562
      For ordering and technical support: NCTAMS LANT (804) 445-1493.
   e. Terms of contract: Contract is 5 years for products and services starting approximately 1 February 1996.
   f. Additional information: See web site at http://www.eds-gov.com
      Germany 0130-817623, Korea 007811938-8239, Italy 167871203, Japan 004422122579,
      OCONUS Phone: (703) 318-5045, OCONUS FAX: (703) 742-1967

8. Name of contract: **NAVSEA BSY2 (Lockheed-Martin, Syracuse, NY)**

   a. Contract Number: N00024-88-C-6150
   b. Organization/code administering the contract: PMS 425-4
      Contracting officer: Jeff Thrasher
   c. Products that can be procured: F.O. cables, fibers, and cable plant components.
   d. POC: William Carey, PMS 425P8, (703) 602-0014
   e. Delivery: 90 days ARO.

FIBER OPTIC CONTRACT VEHICLES

9. Name of contract: **SMCII (TELOS)**

   a. Contract number: DAHC94-95-D-0010
   b. Organization/code administering contract: NCTAMSLANT Code N811.2
   c. Products that can be procured: Single, dual, and Quad processor HP servers (3 to 12 "hot swap" disk drive bays), multimedia enabled system using Pentium II processor with MMX, network operating systems (Solaris x86, Windows NT Workstation and Server), Microsoft Backoffice Suite (including SQL, Exchange Enterprise Server, SMS, and SNA), application software (MS Office 97, Oracle, and Sybase), network hardware (Cisco hubs, switches, and routers), cable, peripherals (printers, scanners, modems, disk and tape drives) and engineering support services.
   d. POC (Technical): Bob Abernethy (NCTAMSLANT), (804) 445-2576 or DSN 565-2576
      POC (Ordering): Jakki Rightmeyer, (804) 445-1493 or DSN 565-1493
   e. Terms of contract: Contract expires in 30 September 1998 for procurement.
   f. Delivery: 30 days CONUS ARO, 45 days OCONUS ARO.

10. Name of contract: **XENOTECHNIX**

   a. Contract number: N00140-95-D-M033
   b. Organization/code administering the contract: NSWCCD-SSES Code 3351
   c. Products that can be procured under the contract: This is an installation contract. Both LAN and fiber optic cable plant materials can be procured up to 30 percent of the installation cost.
   d. POC: Howard Nixon, (215) 897-1046 or DSN 443-1046
      Naval Surface Warfare Center, Carderock Division
      Philadelphia Naval Business Center
      Attn: Howard Nixon, Code 9152
   e. Terms of contract: Contract expires in 1998, but has follow on provisions.
   f. Delivery: 21 days ARO.

FIBER OPTIC CONTRACT VEHICLES

Rev A: 13 March 1998

Price Comparisons (ViViD and PC LAN+ Contracts)

Table 1. Contract Prices with Units Offered

COMPONENT	CONTRACT					
	PC LAN+		ViViD Lucent		ViViD GTE	
	PRICE	UNIT	PRICE	UNIT	PRICE	UNIT
MIL-C-85045/17 shipboard, 8 fiber cable, MM, thermoset	$,6831 1/	500 meters	$6.51	Per foot (Minimum 2,000 ft. order)	$7.91	Per foot
					$7.05	Per foot (Over 10,000 ft. order)
MIL-C-85045/13 shipboard, 8 fiber cable, MM, thermoplastic	$5,288 1/	500 meters	$5.10	Per foot (Minimum 2,000 ft. order)	$6.22	Per foot
					$5.32	Per foot (Over 10,000 ft. order)
MIL-C-85045/18 shipboard, 4 fiber cable, MM, thermoset	$3,938 1/	500 meters	$4.70	Per foot (Minimum 2,000 ft. order)	$4.70	Per foot
			$4.50	Per foot (Minimum 50,000 ft. order)	$4.50	Per foot (50,000 to 100,000 ft. order)
			$4.30	Per foot (Minimum 100,000 ft. order)	$4.30	Per foot (100,000 to 150,000 ft. order)
			$4.10	Per foot (Minimum 150,000 ft. order)	$4.10	Per foot (Over 150,000 ft. order)
MIL-C-85045/15 shipboard, 4 fiber cable, MM, thermoplastic	$2,669 1/	500 meters	$3.10	Per foot (Minimum 2,000 ft. order)	$3.96	Per foot
			$2.74	Per foot (Minimum 10,000 ft. order)	$2.74	Per foof (Over 10,000 ft. order)
MIL-C-83522/16 shipboard, ST connector, non-locking, MM	$1,028	Pack-50	$1,021.50	Package of 50	$1324.47	Package of 50

Note:
1/ This CLIN has been suspended.
2. 2000 ft = 609.6 m (ft = feet; m = meters)

FIBER OPTIC CONTRACT VEHICLES

Rev A: 13 March 1998

Table 2. Shipboard Cable Price Comparisons Normalized to 1 Foot Length

COMPONENT	CABLE PRICE PER 1 FOOT LENGTH (BASED ON 500 METER UNIT)					
	PC LAN+		ViViD LUCENT		ViViD GTE	
	PRICE	MFR	PRICE	MFR	PRICE	MFR
MIL-C-85045/17 shipboard, 8 fiber cable, MM, thermoset	$4.16 1/	Chromatic Technologies	$6.51	Brand-Rex	$7.91	Brand-Rex
MIL-C-85045/13 shipboard, 8 fiber cable, MM, thermoplastic	$3.22 1/	Chromatic Technologies	$5.10	Brand-Rex	$6.22	Brand-Rex
MIL-C-85045/18 shipboard, 4 fiber cable, MM, thermoset	$2.40 1/	Chromatic Technologies	$4.70	Brand-Rex	$4.70	Brand-Rex
MIL-C-85045/15 shipboard, 4 fiber cable, MM, thermoplastic	$1.63 1/	Chromatic Technologies	$3.10	Brand-Rex	$3.96	Brand-Rex

Notes:
1/ This CLIN has been suspended.
2. 2000 ft = 609.6 m (ft = feet; m = meters)

FIBER OPTIC CONTRACT VEHICLES

Rev A: 13 March 1998

Table 3. Contract Line Item Numbers (CLIN'S) for PC LAN+ and ViViD Contracts (Shipboard Cable and ST Connector)

COMPONENT	CLIN's FOR CONTRACTS					
	PC LAN+		ViViD LUCENT		ViViD GTE	
	CLIN	UNIT	CLIN	UNIT	CLIN	UNIT
MIL-C-85045/17 shipboard, 8 fiber cable, MM, thermoset	0905 1/	500 m	0327AA	Per foot: (Minimum 2,000 ft. order)	0327AA	Per foot
					0327AB	Per foot: (Over 10,000 ft order)
MIL-C-85045/13 shipboard, 8 fiber cable, MM, thermoplastic	0910 1/	500 m	0328AA	Per foot: (Minimum 2,000 ft. order)	0328AA	Per foot
					0328AB	Per foot: (Over 10,000 ft order)
MIL-C-85045/18 shipboard, 4 fiber cable, MM, thermoset	0915 1/	500 m	0329AA	Per foot: (Minimum 2,000 ft. order)	0329AA	Per foot
			0329AB	Per foot: (Minimum 50,000 ft. order)	0329AB	Per foot: (50,000 to 100,000 ft order)
			0329AC	Per foot: (Minimum 100,000 ft. order)	0329AC	Per foot: (100,000 to 150,000 ft order
			0329AD	Per foot: (Minimum 150,000 ft. order)	0329AD	Per foot: (Over 150,000 ft order)
MIL-C-85045/15 shipboard, 4 fiber cable, MM, thermoplastic	0920 1/	500 m	0330AA	Per foot: (Minimum 2,000 ft. order)	0330AA	Per foot
			0330AB	Per foot: (Minimum 10,000 ft. order)	0330AB	Per foot: (Over 10,000 ft order)
MIL-C-83522/16 shipboard, ST connector, non-locking, MM	0925 2/	Pack-50	0331 3/	Package of 50	0331 3/	Package of 50

Notes:
1/ This CLIN has been suspended.
2/ ST Connector: PC LAN+ = FSI Part # MSTC1000.
3/ ST Connector: ViViD = Lucent Part # P2050A-Z-125 (Com Code 107 629 602).

FIBER OPTIC CONTRACT VEHICLES

Supplemental Information for Contract Vehicles

1. ViViD was awarded to Lucent Technologies, inc., N68939-97-D-0040, and General Telephone Electronics (GTE) Government Systems Corporation, N68939-97-D-0041, on 29 July 1997. The basic contracts are one year with nine one year options and combined have an estimated value of $2.93 billion. These are fixed-price with economic price adjustment, indefinite-delivery, indefinite-quantity (FP with EPA, IDIQ) type contracts.

2. ViViD is designed as a flexible end-user vehicle to meet the Department of the Navy's current and future communications and related requirements. It is intended to provide all hardware, software and services required to implement, enhance, support and integrate voice, video and data. The contracts also provide for standardized shore-to-ship cables, connectors and enclosures. Lucent's contract is limited to modernization. Both contracts provide standards based technology capable of integration and interoperability for both contractor provided and government owned equipment.

3. ViViD offers options to purchase, lease, lease-to-own, and outsource. Extensive support services including training, equipment maintenance (of both contractor provided and government owned equipment), cable plant maintenance, engineering and Davis Bacon labor services are available. ViViD can provide a complete solution when outsourcing from the point of presence to the desktop. When not outsourcing, personal computer-area network plus (PC-LAN+), N68939-95-D-0018, or other standards-based acquisition vehicles can be used to compliment ViViD. PC-LAN+ has comparable terms and conditions, including integration and interoperability with contractor provided and government owned equipment. Additional standards-based acquisition vehicles are available under the information technology electronic commerce (ITEC) direct catalog.

4. The ViViD contracts are open for immediate ordering to DON, Coast Guard, and other Department of Defense Services and agencies. Credit card orders can be made telephonically, via E-mail, or as mutually agreed by contractor and customer. Advise credit card numbers be encrypted or otherwise protected over networks. Hardware/software cannot be combined on the same SF1449 as services. All delivery orders and modifications will be managed through the Navy IT Umbrella Contracts' Central Ordering Management Office at NCTAMS LANT Norfolk. Upon acceptance by the contractor, delivery is within 90 days CONUS and 120 days OCONUS for other equipment and interfaces.

DOC: CONTRACT.DOC